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Understanding depression in university women: The role of stress, attributional style, and self-efficacy.

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UNDERSTANDING DEPRESSION IN UNIVERSITY WOMEN:

THE ROLE OF STRESS, ATTRIBUTIONAL STYLE, AND SELF-EFFICACY

by

Christine Laurent

A Thesis
Submitted to the College of Graduate Studies and Research
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ABSTRACT

The present study sought to gain a better understanding of depression experienced by young women (aged 18 to 24 years) in university. The women completed a series of self-report questionnaires, including the Center for Epidemiologic Studies – Depression Index, Recent Life Events – College Scale, Expanded Attributional Style Questionnaire, and a modified version of the Self-Efficacy Scale. Surprisingly, almost half the 171 women studied (48%) were at least mildly depressed, suggesting that these women are especially vulnerable to depression. As predicted, hierarchical regression analyses indicated that depression was significantly related to stress, attributional style, and self-efficacy, although the relationships among the variables differed from expectation. Important differences in the predictors of depression, but not the overall vulnerability to depression, emerged when distinguishing between women who emphasized achievement, women who emphasized interpersonal relationships, and women who emphasized both domains. The present findings suggest that when working with young women in university it is particularly important to assess their current level of depression and their relative emphasis on achievement and interpersonal domains in order to gain a better understanding of the relevant risk factors.

DEDICATION

To the important women in my life,
my mother and my grandmother.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

The purpose of the present study was two-fold. First, this study sought to provide a clearer understanding of how stress, attributions, and feelings of competence (i.e., self-efficacy) influence depression experienced by young women in university. Second, this study attempted to determine whether the relationship of stress, attributions, and self-efficacy differed for achievement and interpersonal domains as well as to identify meaningful subgroups of university women according to their relative emphasis on these domains. The present study was discussed within the context of the learned helplessness theory of depression (a cognitive diathesis-stress model) and the following framework.

Depression and other affective disorders are among the most prevalent psychiatric conditions in North America (see Maxmen & Ward, 1995; Rehm & Tyndall, 1993 for reviews). Community surveys indicate that 7.8 to 33.7% of the population (depending on the sample characteristics) have experienced at least one episode of depression (major or minor) during their lifetime (see Kaelber, Moul, & Farmer, 1995; Myers & Weissman, 1986; Radloff & Locke, 1986). Recent studies suggest that depression is highest among 18 to 24 year olds (see Nolen-Hoeksema, 1990; Radloff & Locke, 1986). Research has also noted important gender differences in prevalence rates (see Bebbington, 1996; Blumenthal, 1994; Nolen-Hoeksema, 1987; 1990; 1995; Rehm & Tyndall, 1993; Weissman & Klerman, 1977 for reviews). On average, women are twice as likely as men to be diagnosed and receive treatment for depression or depressive disorders in health care settings (Blumenthal, 1994; Eaton et al., 1993; Nolen-Hoeksema, 1995; Weissman & Klerman, 1977) and to report depressive symptomatology within community samples

(e.g., Myers et al., 1984). One exception to this general pattern occurs in university samples, where gender differences are less clear (e.g., Stangler & Printz, 1980). Stressful life events and depressive cognitions appear to be particularly relevant to the experience of depression in women (e.g., Jack, 1987; Nolen-Hoeksema, 1990).

Two of the most prominent cognitive theories of depression are Beck's (1967; Beck, Rush, Shaw, & Emery, 1979) cognitive theory and various reformulations of the learned helplessness theory (e.g., Abramson, Seligman, & Teasdale, 1978; Peterson & Seligman, 1984; Peterson, Maier, & Seligman, 1993). Both theories follow a diathesis-stress paradigm, such that depression is predicted when individuals with negative thinking patterns experience stressful life events (e.g., Abramson, Alloy, & Metalsky, 1988; Alloy, Hartlage, & Abramson, 1988). Whereas these theories have been helpful in understanding depression, neither theory has provided a sufficient explanation of depression. Consequently, researchers (e.g., Maddux, 1995; Maddux & Meier, 1995; Stanley & Maddux, 1986) have suggested that incorporating self-efficacy expectancies (beliefs about personal competence; Bandura, 1977; 1982) into either theory could improve the understanding of depression. The learned helplessness theory, which posits that it is a negative attributional style (i.e., explaining failure or other negative events in terms of internal, stable, and global causes) which determines whether depression is experienced, clearly identifies the role of an intervening variable (expectancies) in its model. Consequently, researchers have focused on the usefulness of integrating self-efficacy expectancies into the learned helplessness framework, with promising results (e.g., Houston, 1995; Schiaffino & Revenson, 1992). Specifically, these preliminary studies have suggested that self-efficacy expectancies *moderate* the relationship between attributional

style and depression (i.e., influence the strength and direction of the relationship; Baron & Kenny, 1986) rather than *mediate* the relationship (i.e., act as intermediary mechanisms through which attributional style impacts upon depression; Baron & Kenny, 1986). That is, level of self-efficacy determines the effect a negative attributional style has upon depression.

According to the fourth edition of the Diagnostic and Statistical Manual (DSM-IV; American Psychological Association, 1994), depression is defined as the presence of five or more of the following criteria over a two week period: depressed mood, feelings of worthlessness or inappropriate guilt, loss of pleasure, sleep or eating disturbances, psychomotor agitation or retardation, weight loss, fatigue/loss of energy, concentration difficulties/indecision, and suicidal ideation or attempt. In a survey of the general population, the National Institute of Mental Health (NIMH; Reigier et al., 1988) study found that 5.8% of the US population surveyed had suffered from at least one episode of depression, as defined in the DSM-IV. An additional 3.3% of the population had experienced dysthymia, a mild to moderate impairment in functioning due to chronic depressed mood. Moreover, there is much evidence to suggest that the rate of depression has been increasing since the beginning of the 20th century (e.g., see Fombonne, 1994; Klerman et al., 1985), particularly among the young (e.g., Kessler et al., 1994; Myers et al., 1984; Robins et al., 1984). Indeed, the rate of depression among young adults is 2 to 5 times greater for individuals born between 1966 and 1977 than for individuals born between 1936 and 1965 (Kessler et al., 1994). Furthermore, Bonner and Rick (1988) found that the incidence of depression and dysthymia was twice as high among individuals attending university/college than among similarly matched young adults who are working.

Women are also particularly vulnerable to depression (e.g., Nolen-Hoeksema, 1987; 1990). The preponderance of depression in women, which has been documented since the 19th century (see Weissman & Klerman, 1977), extends to a wide variety of countries and cultures (see Nolen-Hoeksema, 1987; 1990). However, notable exceptions have been reported. For instance, no gender differences were reported in an Old Order Amish community (Egeland & Hostetter, 1983) and in developing or predominantly rural countries (see Nolen-Hoeksema, 1990). Moreover, Radloff (1975; Radloff & Rae, 1979) found that men outnumber women when comparing rates of depression in the widowed and never married. Similarly, among college and university students, gender differences have been inconsistently reported in the literature. Some studies have found no differences (e.g., Hammen & Padesky, 1977; Oliver & Burkham, 1979; Padesky & Hammen, 1981), while others have found increased rates among women (e.g., Boggiano & Barrett, 1991; Waelde, Silvern, & Hodges, 1994). Furthermore, Stangler and Printz (1980) obtained mixed results in their examination of 500 consecutive patient files at the University of Washington Psychiatric Clinic for Students. Specifically, they found that equal numbers of women and men were receiving treatment for depression, but more women were receiving treatment for dysthymia.

Historically, research on depression has focused on evaluating the role of individual factors in the etiology and maintenance of depressive states. In a recent review, Maxmen and Ward (1995) recognized that early conceptualizations ranged from purely biological theories (endogenous depression or depression believed to be caused by factors within the individual) to environmentally based theories (exogenous depression or depression resulting from reactions to stressors or external factors; see also Rehm &

Tyndall, 1993). As these early models proved inadequate in explaining the experience of depression, researchers began examining the contribution of cognitive factors (see Hammen, 1988 for a review), particularly within a diathesis-stress paradigm (e.g., Abramson, Alloy, & Metalsky, 1988; Peterson & Seligman, 1984; Riskind, Rholes, Brannon, & Burdick, 1987).

Within the diathesis-stress paradigm, individual predispositions or diatheses (e.g., a maladaptive cognitive style) and the experience of stress are both considered critical (e.g., Abramson, Alloy, & Metalsky, 1988). In isolation, neither factor is believed to be sufficient for the expression of depression; however, depression is predicted when both factors are present. That is, depressive cognitions (diatheses) render an individual more vulnerable to the effects of life's stressors.

Research on the impact of stress has demonstrated that depressive episodes are often preceded by major life events which may be classified as stressors (e.g., Lloyd, 1980). The events most likely to precede such episodes tend to be clearly negative events (rather than ambiguous or positive life changes), severe undesirable events (rather than daily hassles), individual difficulties (rather than shared difficulties), and prolonged or ongoing difficulties (rather than brief or transient stressors; see Brown & Harris, 1978; Monroe, 1990; Paykel, 1979 for reviews). In particular, the loss of significant others, and other interpersonal losses, often precede depression (Brown & Harris, 1978; Paykel, 1979). However, many individuals experience such events without the same depressive reaction (Hammen, 1988). For example, women and men tend to have contrasting responses to different kinds of stressors, with women being more influenced by interpersonal stressors and men being influenced by achievement stressors (e.g., Jack,

1987).

Research on gender differences indicates that the experience of stressful life events is particularly important in the etiology of depression in women and that two categories of stressors (interpersonal and achievement) tend to differentiate women and men (e.g., Boggiano & Barrett, 1991; Jack, 1987; Nolen-Hoeksema, 1987; 1990; Waelde, Silvern, & Hodges, 1994). Among individuals receiving treatment for clinical depression, significantly more women than men report the occurrence of stressful life events in the year preceding the depressive episode (Spangler, Simons, Monroe, & Thases, 1996). This difference appears to reflect gender differences in reaction to stressful *interpersonal* events. Specifically, for women depression is more often preceded by disruptions and conflicts in their close relationships than by achievement related stressors. In contrast, depression in men is more likely preceded by loss of an ideal or achievement goal (e.g., Jack, 1987). Indeed, in a pivotal one-year prospective study of major depression in women, Kendler, Kessler, Neale, Heath, and Eaves (1993) found that the strongest predictor of depression was the occurrence of recent stressful events, with interpersonal difficulties being especially important. Additional support for the influence of interpersonal stresses on women's depression comes from studies of adolescent girls and married women. For adolescent girls, depression appears to be more prevalent among those who are dating than those who are not, suggesting that pubertal changes and aspects of heterosexual relationships influence their feelings of happiness (see Simmons & Blyth, 1987). Unfortunately, this study did not assess the quality of the dating relationships. However, Radloff's (1975; Radloff & Rae, 1979) studies of married women indicate that level of marital discord is highly predictive of depression. Taken together, these studies suggest

that stressful life events, particularly those of an interpersonal nature, play a significant role in women's experience of depression.

Among women attending university, the distinction between achievement and interpersonal stressors is less pronounced (e.g., Waelde, Silvern, & Hodges, 1994). Given the emphasis on education and achievement in university, it is not surprising that female students cited education as the single most important area of their lives (Blais, Vallerand, Briere, Gagnon, & Pelletier, 1990). At the same time, these women continued to place a strong emphasis on interpersonal relationships (Blais et al., 1990), especially close, meaningful relationships (Boggiano & Barrett, 1991). Consistent with this dual emphasis, Waelde, Silvern, and Hodges (1994) found that achievement stressors were as strongly related to depression as interpersonal stressors for a sample of women attending university. Thus, women attending university differ from women in the general population in that both types of stressors are strongly related to depression. Clearly, however, many university women deal with both interpersonal and achievement stress without becoming depressed. At this point, it is important to identify factors which mitigate the relationship between stress and depression. One promising explanation is the mitigating effects of cognitive factors.

The role of cognitive factors in women's experience of depression has been widely recognized (e.g., Abramson & Andrews, 1982; Beck, 1967; Nolen-Hoeksema, 1990; Teasdale, 1988). For instance, Weissman and Klerman (1977) have suggested that socialization factors, particularly the tendency to socialize women to see themselves as incapable of effecting change, are partially responsible for the higher rate of depression in women. It has also been suggested that women tend to have a more pessimistic view of

themselves (see Blumenthal, 1994), blaming themselves for their own failures and seeing themselves as further from their ideal self than do men (Boggiano & Barrett, 1991). Given this predisposition toward negative self-evaluation/cognitions and the large impact of stressful life events on depression, it is likely that cognitive diathesis-stress models would be particularly important for understanding depression in women.

One of the most frequently studied cognitive diathesis-stress models of depression is the reformulated learned helplessness theory (e.g., Abramson, Seligman, & Teasdale, 1978). A basic assumption underlying this attributional theory is that individuals' beliefs about the causes of a situation largely determine their understanding of, and reaction to, the event. Within this conceptualization, it is postulated that the explanations an individual makes for stressful situations (e.g., failure situations) influence whether or not the individual experiences the symptoms of helplessness, including depressed affect. These explanations, also called causal attributions, are believed to vary along three dimensions (internality, stability, and globality), each of which is posited to influence different aspects of helplessness. The first dimension, internality, relates to the perception of blame and responsibility. That is, internal explanations (e.g., "I am dumb") place the cause of the failure within the individual; whereas, external explanations blame other people or the environment (e.g., "the test was hard" or "the teacher was in a bad mood"). Central to the second dimension, stability, is the duration of the cause and, by extension, the chronicity of the helpless symptoms (i.e., depressive feelings and passivity). For instance, believing that "I have never been good at socializing with people" leads to the notion that the situation will be long lasting; whereas, believing "I did not feel sociable that day" suggests that the situation will be short-lasting. Finally, the globality dimension is a measure of the

extent to which the cause of the event is believed to affect other situations. Specific explanations (e.g., "I have difficulty asking for a raise") limit the reaction to situations which are highly similar; whereas, global explanations (e.g., "I am a terrible employee") suggest that similar results will occur in a wide variety of settings/situations (e.g., in all success/career-related domains). Within this framework, a negative or depressogenic attributional style is defined as explaining failure in terms of internal, stable, and global causes (e.g., a student states that she failed an exam because she is stupid). Within the context of learned helplessness theory, researchers (e.g., Peterson & Seligman, 1984) have proposed that individuals with a depressogenic attributional style are more vulnerable to depression in the face of stressors. Abramson and her colleagues (1988) have further proposed that attributional style *moderates* the relationship between stressors and depression, in that the interaction between attributional style and stressors predicts depression better than considering the two factors alone.

In general, research has shown that people with a depressogenic attributional style, or components of it, have been found to be more depressed following failure (Abramson, Seligman, & Teasdale, 1978), disappointing midterm grades (Metalsky, Abramson, Seligman, Semmel, & Peterson, 1982), and romantic break ups (Hammen, Krantz, & Cochran, 1981) than individuals who attribute stressful events to unstable, specific, and external causes. However, some researchers have been unable to replicate the relationship between attributional style and depression (e.g., Follette & Jacobson, 1987; Peterson, Rosenbaum, & Conn, 1985). For example, Boggiano and Barrett (1991) found that female university students had more maladaptive attributional styles (i.e., attributing stresses to more internal, global, and stable causes) and were more depressed than their male

counterparts. However, attributional style and depression were not significantly related in this study. In contrast, Handal, Gist, and Wiener (1987) obtained no significant differences between female and male university students in terms of attributional style or depression. However, attributional style and depression were significantly related for the male, but not female students. Using a larger sample, Bruder-Mattson and Hovanitz (1990) obtained still different findings. That is, the correlation between depression and components of attributional style held for female, but not male, undergraduate students. Further confusion is added by the fact that, despite the inclusion of similar studies, reviews of the literature have resulted in wide variations in the interpretation of the relationship between attributional style and depression (e.g., Brewin, 1985; Coyne & Gotlib, 1983; Peterson & Seligman, 1984; Robins, 1988).

Diverse explanations have been suggested for the inconsistencies reported in the literature regarding the relationship between attributional style and depression. Researchers such as Coyne and Gotlib (1983) have concluded that attributional style has little influence on depressive symptoms. Cutrona (1983) has taken the extreme position in questioning whether a stable attributional style exists. Conversely, Peterson, Villanova, and Raps (1985) maintain that these inconsistencies are primarily a reflection of how attributional style was measured: using single real situations as opposed to multiple hypothetical situations and using unreliable measures. They have also argued that insufficient sample size is responsible for the poor correlation between attributional style and depression. Similarly, Robins' (1988) meta-analysis suggests that many of the studies reviewed lacked sufficient statistical power. Hammen (1988) has criticized research in this area for failing to assess the stress component or relying almost exclusively on

achievement situations when stressors are taken into consideration. Other researchers have emphasized the role of intervening variables, such as self-efficacy expectancies, in producing these inconsistent findings (e.g., Maddux & Meier, 1995; Stanley & Maddux, 1986).

Although Peterson and Seligman have acknowledged the role of intervening variables in the learned helplessness theory of depression as early as 1984, few studies have addressed this issue until recently. According to Peterson and Seligman (1984), attributional style is not directly related to depression, but rather influences perceptions of whether similar events will occur in the future (i.e., perceptions of "future uncontrollability" and "non-contingency"), which in turn are responsible for depressive feelings. That is, expectancies are believed to *mediate* the relationship between attributional style and depression. Until recently, however, Peterson and Seligman maintained that no adequate means existed to measure these intermediary perceptions. In 1993, Peterson, Maier, and Seligman recommended that research explore how expectations about the future influence the relationship between attributional style and depression.

Maddux and his colleagues (e.g., Maddux, 1995; Maddux & Meier, 1995; Stanley & Maddux, 1986) have suggested that self-efficacy beliefs (i.e., beliefs about how capable an individual feels in dealing with a situation; Bandura, 1977; 1982; 1986) may influence the relationship between the attributions an individual makes for stressful situations and the resulting feelings and behaviors. That is, they propose that self-efficacy theory compliments and completes learned helplessness theory by providing a means to measure expectations of "non-contingency" and of "future uncontrollability." In the most general

terms, self-efficacy theorists maintain that an individual's sense of mastery or efficacy determines the actions chosen, level of persistence, and emotional reactions experienced in the face of adversity (Bandura, 1977; 1982; 1986). Thus, when people question their ability to perform a behavior (low self-efficacy expectancy), it is posited that they are likely to give up attempting to perform the behavior and to experience feelings of depression, despondency, and self-denigration (Maddux, 1995). Consistent with this theory, research and clinical experiences have revealed that depressed people perceive themselves as having little control over their own environment (see Stanley & Maddux, 1986) and consider themselves to be less capable than their peers in a variety of areas including home, school, work, and social settings (Kander & Zeiss, 1983; Lewinsohn et al., 1980). In a prospective study, Lightsey (1997) found that higher levels of perceived self-efficacy were a preventive factor in reducing the risk of depressive feelings and symptoms when experiencing negative life events. Moreover, simultaneously considering negative life events and perceived self-efficacy improved the prediction of depression beyond considering both variables in isolation, suggesting that self-efficacy moderates the relationship between stress and depression.

Research into the attributional style of depressed people has provided support for the importance of perceived controllability of outcomes, particularly self-efficacy expectancies (Anderson & Arnoult, 1985; Anderson, Horowitz, & French, 1983). For instance, Anderson, Horowitz, and French's study provides strong evidence that self-efficacy expectancies are most central to the perceptions of uncontrollability in depressed individuals. Specifically, the authors reported that "depressed ... people ascribe interpersonal failures to relatively permanent (stable) defects in themselves, such as ability

or trait deficits" and that "people who ascribe interpersonal failures to lack of ability become easily discouraged when faced with initial difficulties and show motivational and performance deficits" (1983, p. 137). Recent studies have focused on understanding how general expectancies and self-efficacy expectancies influence the relationship between attributional style and depression (e.g., Houston, 1995).

To date, research has indicated that self-efficacy beliefs have a *moderating* role on the relationship between depression and the various dimensions of attributional style (i.e., Houston, 1995; Schiaffino & Revenson, 1992). For instance, Houston's (1995) findings illustrated that a maladaptive attributional style (explaining failures in terms of stable and global causes) was associated with higher rates of depression for individuals with lower levels of self-efficacy but not for individuals with higher levels of self-efficacy. These findings differ from the relationships posited by learned helplessness theory (i.e., that expectancies have a mediator role; e.g., Peterson & Seligman, 1984). Using a sample of rheumatoid arthritis patients suffering from a recent symptom flare up (stressor), Schiaffino and Revenson (1992) examined both mediating and moderating relationships between attributional style and self-efficacy expectancies within the same study. Their findings were consistent with moderating but not mediating effects, again contrary to the learned helplessness theory.

The breadth of the studies examining the effects of attributional style and self-efficacy expectancies on depression have ranged from rheumatoid arthritis patients suffering from a recent symptom flare up (Schiaffino & Revenson, 1992) to university students experiencing failure on a laboratory-based achievement task (Houston, 1995). However, no study has applied this framework to women attending university and the

stressors they typically face. The promising results from these preliminary studies suggest that integrating self-efficacy expectancies within the learned helplessness theory may provide a useful framework for understanding the depression experienced by women in university. Moreover, given the importance of interpersonal and achievement concerns for these women, it is likely that focusing on these domains would be particularly beneficial for understanding depression within this population.

Summary

To summarize, depression is an increasing problem to which young women are particularly vulnerable. However, it remains unclear whether the increased incidence of depression among women in the general population extends to women in university. Gender differences in rates of depression have often been explained in terms of the effects of negative life events (especially in the interpersonal sphere) and differences in cognitive factors, including attributional style and perceived self-efficacy. While each of these explanations appears relevant to our conceptualization of depression in women, it is believed that simultaneously examining these factors will lead to a clearer understanding of depression. Preliminary studies examining these factors have provided promising results. In the present study, the Recent Life Events - College Scale (RLE-CS; Hodges, 1994; Waelde, Silvern, & Hodges, 1994), the Expanded Attributional Style Questionnaire (EASQ; Peterson & Seligman, 1984), and a modified version of the Self-Efficacy Scale (MSES; Sherer et al., 1982) were administered to young women in university to determine the relationship of these variables to depression as measured by the Center for Epidemiological Study Depression (CES-D) Scale (Radloff, 1975). In addition, the impact of stressors and cognitions in both the interpersonal and achievement domains were

examined to determine whether these domains are particularly important in these young women's lives. Finally, women were classified according to their relative emphasis on achievement and interpersonal domains to determine whether meaningful subgroups emerged.

Hypotheses

The first set of hypotheses tested dealt with the theoretical and empirical relationships among depression, stress, attributional style, and self-efficacy.

Hypothesis 1. Consistent with previous research (see Hammen, 1988), it was hypothesized that stress would be significantly related to depression (see Figure 1 – H_1).

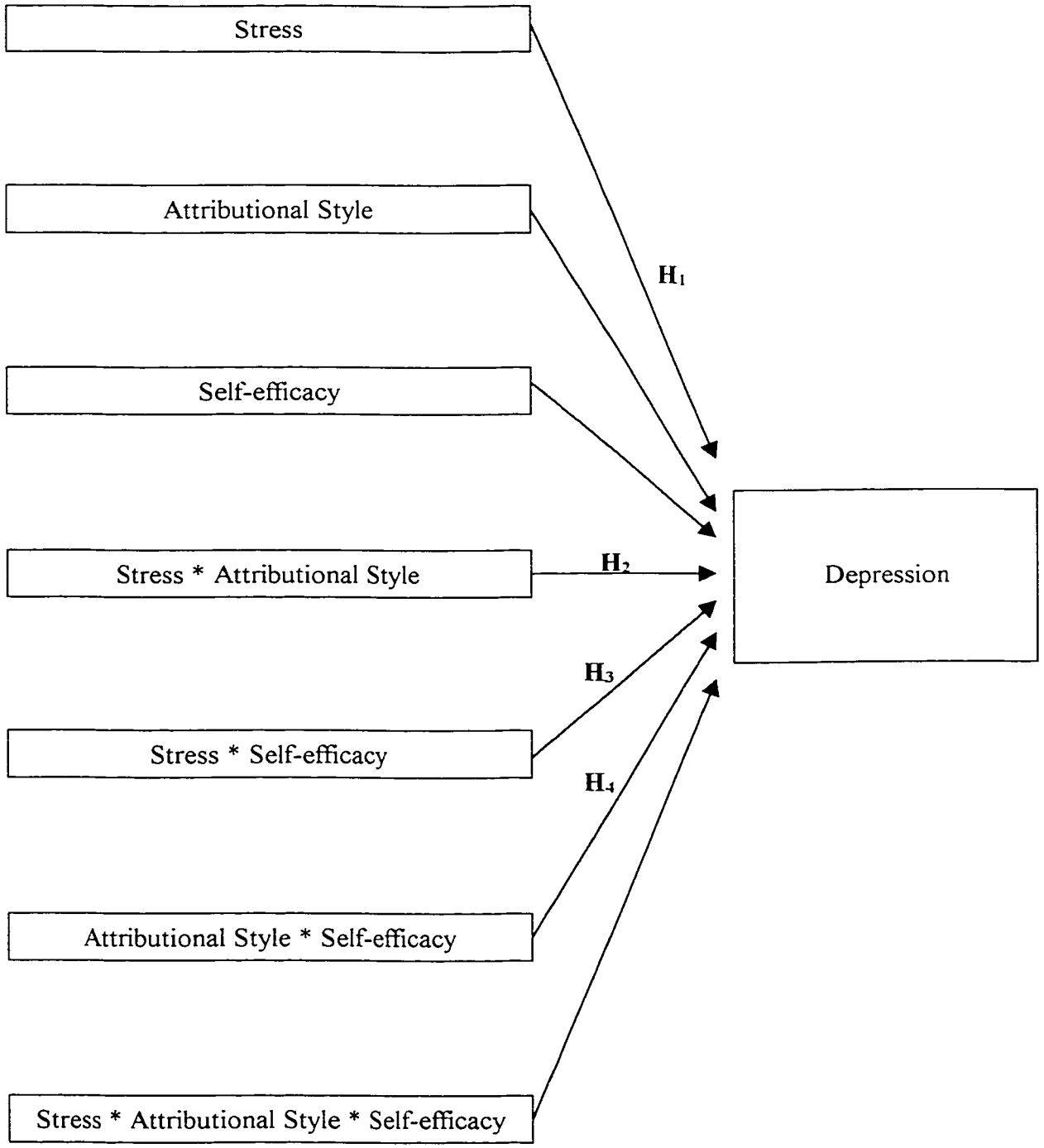
Hypothesis 2. As predicted by the learned helplessness theory of depression (e.g. Abramson, Alloy, & Metalsky, 1988; Alloy, Hartlage, & Abramson, 1988), it was also hypothesized that the interaction of stressful life events and a maladaptive attributional style would predict depression above and beyond these two factors alone (i.e., attributional style would moderate the relationship between stressful life events and depression; Figure 1 – H_2).

Hypothesis 3. Consistent with Lightsey's (1997) findings, it was hypothesized that self-efficacy would also moderate the relationship between stress and depression (Figure 1 – H_3).

Hypothesis 4. Consistent with previous research (e.g., Schiaffino & Revenson, 1992), it was hypothesized that self-efficacy would moderate the relationship between attributional style and depression as well (Figure 1 – H_4).

Figure Caption

Figure 1. Hypothesized relationships among stress, attributional style, and self-efficacy in predicting depression.


Stress
Attributional Style
Self-efficacy
Stress * Attributional Style
Stress * Self-efficacy
Attributional Style * Self-efficacy
Stress * Attributional Style * Self-efficacy
Depression
H1
H2
H3
H4

The second set of hypotheses tested related to the traditional gender differences found in the general population (i.e., male emphasis on achievement and female emphasis on interpersonal relationships; e.g., Jack, 1987) and the dual emphasis found among women in university (e.g., Blais et al., 1990).

Hypothesis 5: It was hypothesized that, for subgroups of women, the relationships of stress, attributional style, and self-efficacy would differ for the achievement and interpersonal domains.

Hypothesis 6: Finally, it was hypothesized that the predictors of depression would differ for women emphasizing interpersonal relationships and women emphasizing achievement. Consistent with the research on gender differences in depression (e.g., Cronkite & Moos, 1987), it was expected that the relationship between stress and depression would be stronger for women emphasizing interpersonal relationships than for women emphasizing achievement.

CHAPTER II

METHOD

Participants

One hundred seventy two women were recruited from first, second, and third year undergraduate psychology courses to participate in the present study for one bonus credit towards their final grade. In order to obtain a unitary grouping of age mates who are comparable in terms of basic demographic variables, risk of depression, experience of negative life events, and number / type of social and lifestyle transitions (Lin, Dean, & Ensel, 1986), only women between the ages of 18 and 24 years were selected. One woman fell beyond this age range and was removed from the analyses.

Materials

Demographic questionnaire. A brief questionnaire (see Appendix A) was administered to assess basic demographic information (e.g., age, living arrangement, academic major) and to determine the women's perspectives of how important the interpersonal and achievement aspects of their lives are to them. The women were asked to rate the importance of both interpersonal (i.e., "relationships") and achievement (i.e., "education/career") domains for their happiness on a 5-point scale from 1 ("not important") to 5 ("extremely important"), referred to as Relationship Importance and Education Importance. The women were also asked to directly compare the interpersonal and achievement domains in terms of the impact on their feelings (Impact) and the overall level of importance (Most Important), both on a 5-point scale. Lower numbers indicated greater emphasis on the interpersonal domain and higher numbers indicated greater emphasis on the achievement domain. A measure of overall emphasis on the achievement

domain (Achievement Emphasis) was calculated by adding the responses to the Education Importance, Impact, and Most Important items. A measure of the overall emphasis on relationships (Interpersonal Emphasis) was calculated by first reverse scoring the Impact and Most Important items, such that a score of 5 became a stronger emphasis on relationships, and then adding these reverse scores to the Relationship Importance item. Finally, a single score measuring the relative emphasis of relationships to education/career (Overall Emphasis) was computed by subtracting the Interpersonal Emphasis score from the Achievement Emphasis score. Negative scores on Overall Emphasis indicate a greater emphasis on relationships and positive scores indicate a greater emphasis on education/career.

Stressful life events. The level of stress experienced by each woman was assessed using Hodges' (1968) Recent Life Event — College Scale (RLE-CS; Waelde, Silvern, & Hodges, 1994; see Appendix B). Adapted from Holmes and Rahe's (1967) scale, Hodges' 93-item inventory includes situations that are specific to the life experiences of college and university students (e.g., "Increased problem with academic performance"), which is considered important to obtain an accurate assessment of the level of stress (Turner & Wheaton, 1995). As in the original scale, this inventory contains both positive and negative stressful life events. Participants were asked to indicate whether each event has occurred in the past 6 months and to rate each event on a four-point scale from "very positive" to "very negative." As research has shown that negative stressors are more consistently related to depression than are positive stressors, only those events rated as "slightly negative" or "very negative" were considered in the analyses. As depression has often been associated with a more pessimistic evaluation of situations (see for example

Dohrenwend & Dohrenwend, 1978), the level of stress was calculated by tallying the number of negative events, regardless of severity rating, experienced in the past 6 months.

In order to derive separate indices for the level of interpersonal and achievement stressors, the divisions generated by Waelde, Silvern, and Hodges (1994) were initially used. However, examination of the responses in the present study indicated that some life events rated as negative in the present sample were not included in Waelde, Silvern, and Hodges' (1994) classification. Consequently, six graduate students, including the author, classified each life event into one of the following: interpersonal domain, achievement domain, both domains, or neither domain. Life events which were classified by at least 5 of the 6 raters as belonging to the achievement domain and which were not classified as belonging to the interpersonal domain were retained as achievement items. Similarly, life events which were classified by at least 5 of the 6 raters as belonging to the interpersonal domain and which were not classified as belonging to the achievement domain were retained as interpersonal items. Using these criteria, 26 life events were designated as achievement items and 47 life events were designated as interpersonal items. Items from each domain are indicated in Appendix B.

Attributional Style. Attributional style was assessed using the Expanded Attributional Style Questionnaire (EASQ; Peterson & Seligman, 1984; see Appendix C). The EASQ consists of 24 hypothetical negative events (e.g., "You meet a friend who acts hostilely towards you"). Participants were asked to read each of the scenarios and imagine it as vividly as possible. For each scenario, the participants were asked to "write down the *one* major cause" of the stressful situation and then to rate the cause on a 7-point Likert-type scale with respect to internality, stability, and globality. The scale may be scored by

simply summing the items for each dimension, combining the three dimensions to obtain a single composite measure of attributional style, or combining the stability and globality dimensions into a general composite (see Peterson, Maier, & Seligman, 1993). The EASQ uses a large number of *negative* scenarios, which has been shown to increase the reliability and stability of the attributional style measure (Peterson, Villanova, & Raps, 1985). The original 12-item Attributional Style Questionnaire (ASQ; Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982) had low to adequate internal consistency for the internality, stability and globality dimensions (.44, .63, and .63 respectively) but satisfactory test-retest reliabilities over weeks to months (r = .60 and greater; Peterson, Maier, & Seligman, 1993). The increased number of scenarios in the EASQ resulted in substantial improvement to the reliabilities for the individual domains: .66 for internality, .85 for stability, and .88 for globality (Peterson & Seligman, 1984). Although the temporal stability of attributional style has been adequately tested, researchers have questioned the stability across situations (e.g., Cutrona, Russell, & Jones, 1985). In fact, data from Cutrona and her colleagues suggests that attributional style for interpersonal situations only weakly correlates with attributional style for achievement situations.

Unlike the ASQ (Peterson et al., 1982), which used an equal number of achievement and interpersonal scenarios, the EASQ was designed to provide a broad sample of hypothetical situations from multiple domains, including, but not limited to, achievement and interpersonal. In order to derive domain specific subscales, 6 female graduate students, including the investigator, read each scenario and classified it into one of the following: interpersonal domain, achievement domain, both domains, or neither domain. Items which were classified by at least 5 of the 6 raters as achievement and which

were not classified as belonging to the interpersonal domain were retained as achievement items. Similarly, items which were classified by at least 5 of the 6 raters as interpersonal and which were not classified as belonging to the achievement domain were retained as interpersonal items. Using these criteria, five scenarios were designated as achievement items and seven scenarios were designated as interpersonal items (Items from each domain are indicated in Appendix C).

Self-efficacy. Self-efficacy was measured using a 39-item modified version of Sherer et al.'s (1982) Self-Efficacy Scale (MSES; see Appendix D). As the original 16 items comprising the academic/achievement subscale had good criterion, content, and construct validity (Sherer & Adams, 1983; Woodruff & Cashman, 1993), these items were retained. To improve the validity of the 6-item social self-efficacy subscale, 8 items dealing with maintaining relationships, particularly conflict resolution skills, and 8 items dealing with some more specific interpersonal skills (i.e., communication, openness, and assertiveness) were added. These areas were chosen to assess social skills that are most relevant to the stressors faced by university students (i.e., forming new friendships and maintaining existing relationships). In addition, participants rated the following item ("I believe I am socially competent") in order to establish the internal validity of the measure. To limit the total number of questions in the study, filler items were removed. Participants were asked to rate each item on a 5-point Likert-type scale ranging from "Disagree Strongly" to "Agree Strongly." Each subscale was scored separately by summing the relevant items, with high scores indicating higher levels of perceived self-efficacy. To avoid response bias, approximately half the items were worded in the opposite direction (e.g., "When I set important goals for myself, I rarely achieve them.") and required reverse

scoring. A global level of self-efficacy was also calculated by summing the two subscales.

Depression. Depression was assessed using the Center for Epidemiologic Studies — Depression (CES-D) Index (Radloff, 1977; see Appendix E). This index is comprised of 20 items (e.g., "I felt that everything I did was an effort.") rated in terms of frequency of occurrence during the past week from 1 ("Rarely or none of the time") to 4 ("Most or all of the time"). To avoid response bias, four of the items are worded positively (e.g., "I enjoyed life") and required reverse scoring. A global index of depression is obtained by summing the responses and subtracting 20 from the total. Designed to assess depression in the general population, items were chosen to represent the major components of depressive symptomatology (depressed mood, feelings of guilt & worthlessness, feelings of helplessness & hopelessness, loss of appetite, sleep disturbance, and psychomotor retardation), with an emphasis on the affective component (Radloff, 1975; 1977). The CES-D is internally consistent (alphas approximately .85; split-half & Spearman-Brown reliability coefficients in the .51 to .67 range over two to eight week periods; Radloff, 1977). It also has high concurrent validity with other mood and depression measures [r = .87 with BDI (Beck, 1967); r = .88 with Zung Self-Rating Depression Scale (SDS; Zung, 1965); r = .91 with van Praag (PVP; Plutchik & van Praag, 1987)] and high content validity compared to the DSM-IV (Okun, Stein, Bauman, & Johnson Silver, 1996).

The CES-D has also shown good discrimination between respondents to a community survey who "needed help for reports of an emotional problem during the past week" and those who did not, and between depressed and nondepressed inpatient psychiatric patients (Radloff, 1977). In a further validation study, Husaini, Neff, Harrington, Hughes, and Stone (1980) evaluated the adequacy of various cut-off scores to

discriminate between these groups. These authors recommended using CES-D scores of 17 as the cut-off for "possible" depression and 23 as the cut-off for "probable" depression. However, most research with the CES-D designates 16 as "at least mildly depressed" to allow for comparisons with the CMHA surveys (Radloff & Locke, 1986). In the current study, scores between 0 and 15 were designated as non-depressed, scores between 16 and 22 were designated as mild depression, and scores of 23 and above were designated as moderate - severe depression.

The Recent Life Events for College Students (Hodges, 1968), the modified Self-Efficacy Scale (Sherer et al., 1982), the Expanded Attributional Style Questionnaire (Peterson & Seligman, 1984), the Center for Epidemiological Studies — Depression index (Radloff, 1975), and the brief demographic sheet were assembled as a single questionnaire package. To minimize sequencing and carry-over effects, the questionnaires were presented in one of four counter-balanced orders such that each questionnaire appeared only once in each serial position and was always preceded by a different questionnaire. The demographic information sheet was consistently presented after the four questionnaires.

Procedure

The participants, who were tested in groups ranging in size from 1 to 20, were asked to read and sign a consent form (see Appendix F) before receiving the questionnaire package for the study. All participants were treated in accordance with the ethical standards for research as outlined in the Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 1992). Prior to completing the questionnaires, the women were encouraged to ask questions before, after, and during the

testing session. They were also reminded that all data would be kept anonymous and confidential with the questionnaires being coded so that their names would not appear with their responses. At the completion of the study, all women were debriefed by the principal investigator and informed that a summary of the results would be available at the completion of the study. In addition to an explanation of the study, the participants were given another opportunity to ask questions about the study and were informed of the availability of counseling services on campus.

CHAPTER III

RESULTS

Sample Characteristics.

The mean age of the 171 participants was 20.3 years (SD = 1.4 years). Other basic demographic information is presented in Table 1. The majority of the women were in their first (n = 81 ; 48.2%) or second year of university (n = 44, 26.2 %), lived with their parents (n = 77; 45.0%) or in Residence (n = 43; 25.1%), and were either dating casually (n = 51, 30%) or had a steady partner (n = 32, 44.1%). Fifty percent of the sample came from Windsor (n = 57, 33.5%) or Essex and Kent counties (n = 28, 16.5%) and a disproportionate number of the women were pursuing majors in Psychology (n = 38, 22.6%), Criminology (n = 26, 15.5 %) and Human Kinetics (n = 19, 11.3%). Examination of the responses to the open-ended question about ethnic/cultural identity indicated that participants varied greatly in their interpretation of this question, with responses including race, country of origin, and religious affiliation. Almost half the women (47.4%) could be classified as at least mildly depressed using the typical cut-off value of 16 on the CES-D (see Table 2). Using the more stringent criteria of 23 on the CES-D (Husiani et al., 1980), resulted in 49 women (28.7%) being classified as moderate to severely depressed. The overall mean score on the CES-D was 16.33 (SD = 11.02), indicating that the average woman in the present study was experiencing mild depression at the time of the study.

Internal consistency.

Internal consistencies were calculated for the Center for Epidemiologic Studies – Depression Index (CES-D), the modified Self-efficacy Scale (MSES), and the EASQ (see Table 3). Both the CES-D and the MSES had high levels of internal consistency (α = .91

Table 1.

Number and Percentage of Women According to Demographic Variables

Demographic Variables	n	%
Year in University (n = 168)		
First	81	48.2
Second	44	26.2
Third	26	15.5
Fourth & Fifth	17	10.1
Relationship Status (n = 170)		
Single	51	30.0
Dating	32	18.8
Steady Dating	75	44.1
Living together or married	12	7.1
Living Arrangement (n = 171)		
Alone	8	4.7
In Residence	43	25.1
With a Partner	9	5.3
With Parents	77	45.0
With Friends	29	17.0
Other Arrangements	5	2.9
Academic Major (n = 168)		
Traditionally Female (n = 64)		
Psychology	38	22.6
Sociology, Social Work, Family & Social Relations	19	11.3
Nursing	7	4.2
Traditionally Male (n = 26)		
Chemistry / Biochemistry	12	7.1
Business / Commerce	8	4.8
Math, Mechanical Engineering, Computer Science	5	3.0
Political Science	1	0.6
Other (n = 68)		
Criminology	26	15.5
Human Kinetics or pre-physiotherapy	19	11.3
Fine Arts & Arts in Education or therapy	11	6.5
Communications Studies	5	3.0
Languages (e.g., French, English)	5	3.0
History	2	1.2
None chosen	10	6.0
City of Origin (n = 170)		
Windsor	57	33.5
Essex & Kent Counties	28	16.5
Other parts of Ontario	68	40.0

Table 2.

Number and Percentage of Women According to the Level of Depression (n = 171)

Level of Depression	n	%
Non-depressed (CES-D < 16)	90	52.6
Mild (CES-D 16 to 22)	32	18.7
Moderate to Severe (CES-D > 22)	49	28.7

Table 3.

Reliability Analyses for the CES-D[a], MSES[b], and EASQ[c]

Scale	# of Items	Alpha
CES-D	20	.91
MSES	39	.87
EASQ		
Subscales Scores		
Internality (I)	24	.59
Stability (S)	24	.86
Globality (G)	24	.83
Composite Scores		
Generality (S + G)	48	.90
EASQ (I + S + G)	72	.87

[a]CES-D = Center for Epidemiologic Studies – Depression Index
[b]MSES = modified Self-Efficacy Scale
[c]EASQ = Expanded Attributional Style Questionnaire

and .87, respectively). For the EASQ, the total composite (i.e., stability + globality + internality), generality composite (i.e., stability + globality), and two of the three subscales (stability, globality) had adequate internal consistencies (alphas ranging from .83 to .90). However, the internality subscale was considerably less reliable (α = .59) and was omitted from further analyses. To maximize the reliability of the attribution measure and minimize the effects of the poor internal consistency of the internal subscale, the generality composite (α = .90) was used in all further analyses. For ease of discussion, the general composite will hereinafter be referred to as attributional style. Higher scores on the EASQ indicate more maladaptive attributional styles (i.e., attributing negative situations to global and stable causes).

The internal consistency of the interpersonal and achievement subscales of the MSES and subscales and composites of the EASQ were also determined (see Table 4). Both the interpersonal and achievement subscales of the MSES had high levels of internal consistency (α = .82 for both). For the EASQ, the pattern of reliability coefficients was similar to the pattern obtained for the entire EASQ scale, with internality being unreliable ($\alpha_{interpersonal}$ = .42 and $\alpha_{achievement}$ = .34) and the generality scale (globality + stability) being the most reliable ($\alpha_{interpersonal}$ = .80 and $\alpha_{achievement}$ = .73). Consequently, only the general composites for each domain were retained for further analyses, again referred to as attributional style for ease of discussion.

Since the Recent Life Events – College Scale is a measure of discreet incidents, internal consistency of items is not expected; consequently, reliability analyses were not performed for the achievement, interpersonal, or total stress scores.

Table 4.

Reliability Analyses for the Interpersonal and Achievement domains of the MSES[a] and EASQ[b]

Scale	Interpersonal		Achievement	
	# of Items	Alpha	# of Items	Alpha
MSES	23	.82	16	.82
EASQ				
Subscales Scores				
Internality (I)	10	.42	5	.34
Stability (S)	10	.75	5	.60
Globality (G)	10	.71	5	.61
Composite Scores				
Generality (S + G)	20	.80	10	.73
EASQ (I + S + G)	30	.79	15	.68

[a]MSES = modified Self-Efficacy Scale
[b]EASQ = Expanded Attributional Style Questionnaire

Missing Data.

Of the 171 women completing the EASQ, 38 (22.2%) omitted at least one scenario. To maintain adequate sample size, and adequate statistical power, the mean value of a participant's remaining scores were substituted for up to 2 missing scenarios, resulting in a total available sample of 163 participants. Examining the pattern of responses for the achievement and interpersonal domains separately revealed that 6 women (3.5%) omitted at least one scenario from the achievement domain and 19 women (11.1%) omitted at least one scenario from the interpersonal domain. For each domain, the mean value of the participant's remaining scores was substituted for 1 missing scenario to maintain adequate sample size. This procedure resulted in 168 available participants for the achievement domain and 167 for the interpersonal domain. All women completed the RLE-CS and CES-D measures. For the MSES, one woman omitted one item (the mean value of the other responses was substituted) and another woman omitted an entire page (24 items; the data on this measure were discarded).

Preliminary Analyses

Preliminary analyses were conducted to identify significant relationships between demographic variables and depression. Table 5 presents the means and standard deviations for depression (as measured by the CES-D) according to the categories of the nominal variables (i.e., relationship status, living arrangement, city of origin, randomization order, academic major). Separate one-way Analyses of Variance (ANOVAs) were performed to determine whether these variables were significantly related to depression. In order to have sufficiently large cell sizes, the three broad categories of academic majors (i.e., traditionally female, traditionally male, and other) were used for the ANOVA.

Table 5.

Depression as a Function of Nominal Demographic Variables

Demographic Variables	n	M	SD
Relationship Status (n = 170)			
Single	51	17.80	11.16
Dating	32	15.22	9.74
Steady Dating	75	15.96	11.19
Living together or married	12	13.92	12.23
Living Arrangement (n = 166)			
Alone	8	13.38	6.63
In Residence	43	16.51	11.43
With a Partner	9	10.89	6.57
With Parents	77	17.60	11.73
With Friends	29	13.90	8.41
Academic Major (n = 158)			
Traditionally Female	64	16.73	10.57
Traditionally Male	26	19.77	11.73
Other	68	14.79	11.06
City of Origin (n = 170)			
Windsor	57	16.05	11.25
Essex & Kent Counties	28	20.64	11.06
Other parts of Ontario	68	14.88	10.49
Outside Ontario	17	15.76	11.65
Randomization Order (n = 171)			
1	45	18.42	10.79
2	42	16.73	11.14
3	42	17.38	10.61
4	42	13.05	11.14

Similarly, for the living arrangement variable, the "other arrangements" category were excluded from analysis. Depression was not significantly related to relationship status, F (3, 166) = .63, $p > .10$; city of origin, F (3, 166) = 1.87, $p > .10$; randomization order, F (3, 167) = 1.97, $p > .10$; living arrangement F (4, 161) = 1.35, $p > .10$; or academic major F (2, 155) = 1.98, $p > .10$.

Simple correlations between depression, stress, self-efficacy, attributional style, and the remaining demographic variables (e.g., age, year in university) are presented in Table 6. In descending order of importance, depression was significantly correlated with stress ($r = .40$, $p < .001$), self-efficacy ($r = -.35$, $p < .001$), attributional style ($r = .27$, $p < .001$), year in university ($r = -.17$, $p < .05$) and Education Importance ($r = -.16$, $p < .05$). As year in university and Education Importance were significantly related to depression, both variables were included in further analyses to control for their influence on depression scores.

In order to obtain a preliminary understanding of the relationships of stress, attributional style, and self-efficacy to depression, participants were assigned to one of three groups based on level of depression (non-depressed, mild, & moderate-severe). Using level of depression as a grouping factor and year in university and Education Importance as covariates, a Multivariate Analysis of Covariance (MANCOVA) was performed to determine whether the overall scores on the EASQ (attributional style), MSES (self-efficacy), and RLE-CS (stress) differed according to level of depression. The results of the MANCOVA indicated that attributional style, self-efficacy, and stress were significantly related to level of depression, once the effects of year in university and Education Importance were controlled (Wilks Lambda $F_{(6, 304)} = 5.28$, $p < .001$).

Table 6.

Intercorrelations Between Depression, Predictor and Demographic Variables

Measure	1	2	3	4	5	6	7	8	9	10
1. Depression	--	.40***	.27**	-.35***	-.16*	-.08	-.04	.03	-.15	-.17*
2. Stress		--	.26**	-.28***	-.11	-.06	-.03	.04	-.23**	-.35***
3. Attributional Style			--	-.32***	-.05	-.07	-.14	.01	-.10	-.00
4. Self-Efficacy				--	.13	-.03	-.08	.08	.10	.10
5. Education Importance					--	.17*	.36***	.16	.06	.10
6. Greatest Impact						--	.38***	-.24**	.12	.19*
7. Most Important							--	-.40***	.02	-.00
8. Relationship Importance								--	.03	.05
9. Age									--	.75***
10. Year in University										--

* $p < .05$
** $p < .01$
*** $p < .001$

Follow-up Analyses of Covariance (ANCOVAs) were performed to determine which variables were significantly related to the level of depression. Table 7 presents the means, standard deviations, and univariate F-values for the overall measures of EASQ, MSES, and RLE-CS at three levels of depression. Using alpha levels of .05, all three variables (attributional style, self-efficacy, & stress) differed significantly according to the level of depression. Post hoc comparisons using Tukey's Honestly Significant Difference test were then performed to further explore group differences (see Table 7). For the EASQ, the moderate-severe depression group had a significantly more negative attributional style (i.e., attributing negative events to stable and global causes) than the non-depressed group. For the MSES, the non-depressed group had significantly higher self-efficacy than the other groups. Finally, for the RLE-CS, the moderate-severe depression group had experienced significantly higher levels of stress than the other two groups.

These analyses were repeated for the achievement and interpersonal domains of the EASQ, MSES, and RLE-CS. After controlling for the effects of year in university and Education Importance, both the achievement and interpersonal domains of the EASQ, MSES, and RLE-CS were significantly related to level of depression (Wilks Lambda $F_{(6, 312)} = 3.87$, $p < .001$& Wilks Lambda $F_{(6, 310)} = 3.20$, $p < .01$, respectively). Tables 8 and 9 present the means, standard deviations, and univariate F-values for the achievement and interpersonal domains, respectively. The follow-up ANCOVAs indicated that neither the achievement nor the interpersonal domains of the EASQ were significantly related to the level of depression ($p > .10$). However, within both the achievement and interpersonal domains, the scores on the RLE-CS and the MSES significantly differed according to level

Table 7.

Means, Standard Deviations, and Univariate F-values for Overall Scores on Predictor Variables as a Function of Depression

Predictor	Level of Depression			Univariate F
	Non-depressed (n = 85)	Mild (n = 28)	Moderate – Severe (n = 46)	
Attributional Style	195.80_a (33.64)	206.41 (28.21)	212.67_b (33.00)	4.16* (df = 2, 154)
Self-efficacy	147.66_a (14.90)	137.99_b (14.84)	136.34_b (20.70)	7.23** (df = 2, 154)
Stress	8.91_a (4.49)	10.46_a (4.84)	13.39_b (5.52)	10.77*** (df = 2, 154)

Note. Means in the same row with different subscripts differ significantly at $p < .05$ in the Tukey honestly significant difference comparison.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 8.

Means, Standard Deviations, and Univariate F-values for the Achievement Domain of Predictor Variables as a Function of Depression

Predictor	Level of Depression			Univariate F
	Non-depressed (n = 85)	Mild (n = 29)	Moderate – Severe (n = 48)	
Attributional Style	49.89 (7.80)	51.41 (4.91)	51.12 (8.22)	0.84 (df = 2, 158)
Self-efficacy	63.28_a (7.66)	57.76_a (7.95)	58.35_b (9.90)	6.72** (df = 2, 158)
Stress	2.83_a (1.82)	3.14 (1.87)	4.19_b (2.17)	5.84** (df = 2, 158)

Note. Means in the same row with different subscripts differ significantly at $p < .05$ in the Tukey honestly significant difference comparison.
** $p < .01$

Table 9.

Means, Standard Deviations, and Univariate F-Values for Interpersonal Domain of Predictor Variables as a Function of Depression

Predictor	Level of Depression			Univariate F
	Non-depressed (n = 89)	Mild (n = 28)	Moderate – Severe (n = 48)	
Attributional Style	69.43 (13.92)	72.85 (11.89)	74.63 (14.09)	2.34 (df = 2, 157)
Self-efficacy	84.42_a (10.83)	80.13 (11.13)	77.54_b (13.36)	5.26** (df = 2, 157)
Stress	5.01_a (2.92)	5.93 (3.34)	7.08_b (3.31)	5.26** (df = 2, 157)

Note. Means in the same row with different subscripts differ significantly at $p < .05$ in the Tukey honestly significant difference comparison.
** $p < .01$

of depression. Post hoc comparisons were again performed to explore group differences. Within the achievement domain, the moderate-severe depression group had significantly more stress than the non-depressed group and had significantly lower self-efficacy than either the non-depressed or the mildly depressed groups. Within the interpersonal domain, the moderate-severe group had significantly lower self-efficacy and significantly more stress than the non-depressed group.

Evaluation of Research Hypotheses

Hypotheses 1 through 4 (listed in Table 10) were evaluated using hierarchical regression analyses. The hypothesized moderation effects were tested in accordance with the Baron and Kenny (1986) method. Specifically, moderation effects were deemed significant when the interaction terms (the cross product of the predictor variable and the potential moderator) significantly added to the prediction of the outcome variable beyond the contributions made by the individual factors. In order to create the interaction terms, each predictor and potential moderator was first centered by subtracting the group mean on the measure from the individual scores. The centered values were then multiplied to create the interaction terms. For the MSES, an additional transformation was required before centering the variable. Participants' scores on the MSES were subtracted from 195 (the highest possible score) so that higher scores would indicate lower levels of self-efficacy and an increased possibility of depression.

For the hierarchical regression analyses, Education Importance and year in university were entered on Step 1 to control for their effects on depression. Stress was entered on Step 2 to evaluate Hypothesis 1. As there were no theoretical considerations dictating the order of entry for attributional style and self-efficacy, two hierarchical

Table 10.

Summary and Method of Evaluation for Hypotheses 1 through 4

Hypothesis	Method of evaluation
1. Stress will be significantly related to depression.	Step 2 on the regression analysis will be significant.
2. Attributional style will *moderate* the relationship between stress and depression.	The interaction term (attributional style X stress) will contribute beyond the combined individual contributions of stress and attributional style.
3. Self-efficacy will *moderate* the relationship between stress and depression.	The interaction term (self-efficacy X stress) will contribute beyond the combined individual contributions of stress and self-efficacy.
4. Self-efficacy will *moderate* the relationship between attributional style and depression	The interaction term (self-efficacy X attributional style) will contribute beyond the combined individual contributions of attributional style and self-efficacy.

regression analyses were performed, inverting the order of entry for attributional style and self-efficacy. In this fashion, the unique contributions of both predictor variables (i.e., attributional style & self-efficacy) were determined after controlling for the influence of stress, Education Importance, and year in university, and after controlling for the influence of the other predictor. The two-way interaction terms (stress*attributional style; stress*self-efficacy; attributional style*self-efficacy) were entered on Step 5 and three-way interaction term (stress*attributional style*self-efficacy) was entered on Step 6. Results of the hierarchical analysis, displayed in Table 11, indicated that Education Importance and year in university jointly accounted for 4.9% of the variance in depression, F_{change} (1, 56) = 4.00, $p < .05$. Stress contributed an additional 12.8% to the variance in depression, F_{change} (1, 155) = 24.12, $p < .001$, consistent with Hypothesis 1. Attributional style added 3.0% beyond these variables, F_{change} (1, 154) = 5.76, $p < .05$, and self-efficacy contributed an additional 4.1% beyond attributional style, F_{change} (1, 153) = 8.34, $p < .01$. When self-efficacy was entered on the third step, its contribution increased to 5.8%, F_{change} (1, 154) = 11.68, $p < .001$, and the contribution by attributional style (entered on Step 4) decreased to 1.3% of the variance in depression, F_{change} (1, 153) = 2.58, $p > .05$. Thus, self-efficacy was a stronger predictor of depression than attributional style, contributing more unique variance to the prediction of depression than did attributional style. Neither the two-way interaction terms nor the three-way interaction term added significantly to the variance in depression (1.4% and 0.1%, respectively; both $p > .15$), inconsistent with the predicted moderation effects (Hypotheses 2, 3, and 4).

Further Exploration of the Role of Attributional Style & Self-efficacy in Depression

As neither attributional style nor self-efficacy *moderated* the relationship between

Table 11.

Summary of Hierarchical Regression Analyses[a] for Variables Predicting Depression (N = 159)

Step	Predictor	B[b]	Beta[b]	R^2change	Fchange
1	Education Importance	-2.013	-.096	.049	4.00*
	Year in University	-.231	-.021		
2	Level of Stress (Stress)	.644	.300	.128	24.12***
3a	Attributional Style (AS)	.040	.119	.030	5.76*
3b	Self-efficacy (Self-eff)	-.141	-.219	.058	11.68***
4a	Self-Efficacy	-.141	-.219	.041	8.34**
4b	Attributional Style	.040	.119	.013	2.58
5	Stress * AS	.0073	.110	.014	0.93
	Stress * Self-eff	-.015	-.133		
	AS * Self-eff	.00015	.008		
6	Stress * AS * Self-eff	.0001	.037	.001	0.14
				R^2 =	.262
				Adj R^2 =	.217
				R =	.512***

[a] Analysis 1 included steps 1, 2, 3a, 4a, 5 & 6; analysis 2: steps 1, 2, 3b, 4b, 5 & 6.
[b] B and Beta coefficients are those computed at the final step.
* $p < .05$
** $p < .01$
*** $p < .001$

stress and depression, additional analyses were performed to gain a better understanding of the role of attributional style and self-efficacy in depression. First, attributional style and self-efficacy were evaluated as *mediators* of the relationship between stress and depression. Second, self-efficacy was evaluated as a *mediator* of the relationship between attributional style and depression.

To determine mediation effects, a series of three regression equations were performed for each variable in question. According to Baron and Kenny (1986), evidence for mediation effects requires that: (1) the predictor variable (i.e., stress) is significantly related to the outcome variable (i.e., depression), (2) the predictor variable is significantly related to the mediator (i.e., attributional style or self-efficacy as was the case), and (3) the relationship between the predictor and outcome variables is significantly reduced by the mediator variable. Tables 12 and 13 indicate the results of these equations for attributional style and self-efficacy respectively. Examination of Table 12 reveals that stress is significantly related to depression ($p < .001$) and to attributional style ($p < .01$), satisfying the first two requirements. The relationship between stress and depression was significantly reduced by attributional style ($p < .05$), although not reduced to zero, indicating that attributional style *partially mediated* the relationship. Following Kenny (Baron & Kenny, 1986; Kenny, 1998), the significance of the reduction was approximated by calculating the ratio of indirect effects (i.e., the coefficient for attributional style regressed on stress X the coefficient for attributional style when depression was regressed on stress and attributional style) to the square root of the standard error of the indirect effects and treating the resulting value as a Z-test. Examination of Table 13 revealed a similar pattern of results, indicating that self-efficacy also *partially mediated* the

Table 12.

Results of Standard Regression Analyses Examining the Mediation Effects of Attributional Style on the Relationship between Stress and Depression

Eq	Outcome Variable	Predictor	B	Std Error	Beta	t
1.	Attributional Style	Stress	1.578	.491	.246	3.216**
2.	Depression	Stress	.842	.148	.399	5.677***
3.	Depression	Stress	.756	.159	.348	4.762***
		Attributional Style	.068	.025	.200	2.741**

** $p < .01$
*** $p < .001$

Table 13.

Results of Standard Regression Analyses Examining the Mediation Effects of Self-efficacy on the Relationship between Stress and Depression

Eq	Outcome Variable	Predictor	B	Std Error	Beta	t
1.	Self-efficacy	Stress	-.981	.248	-.291	-3.960***
2.	Depression	Stress	.842	.148	.399	5.677***
3.	Depression	Stress	.675	.150	.320	4.498***
		Self-efficacy	-.167	.045	-.266	-3.745***

*** $p < .001$

relationship between stress and depression ($p < .05$).

The same procedure was followed to evaluate the role of self-efficacy as a mediator of the attributional style-depression relationship. The results, presented in Table 14, indicate that self-efficacy *partially mediated* the relationship between attributional style and depression ($p < .05$). That is, attributional style was related to depression both directly and indirectly through its influence on self-efficacy.

Taken together these analyses indicate that both attributional style and self-efficacy *partially mediated*, but did not *moderate*, the relationship between stress and depression. Self-efficacy also *partially mediated* the relationship between attributional style and depression.

Exploration of the Effects of Interpersonal and Achievement Variables and Emphases

To examine whether subgroups of women in university could be differentiated in terms of achievement and interpersonal relationships, several statistical approaches were undertaken. First, cluster analysis was performed to determine whether the relationship of stress, attributional style, and self-efficacy differed for the achievement and interpersonal domains. Cluster analysis is a statistical procedure for grouping individuals by maximizing the similarity within groups (clusters) and minimizing the similarity between clusters. Second, separate simple correlations and hierarchical regression analyses were performed for women emphasizing achievement, women emphasizing relationships, and women emphasizing both domains equally. The results of these analyses were then compared to determine whether the predictors of depression were the same for all three groups.

Cluster Analysis

A two-step cluster analysis was performed using the interpersonal and achievement

Table 14.

Results of Standard Regression Analyses Examining the Mediation Effects of Self-efficacy on the Relationship between Attributional Style and Depression

Eq	Outcome Variable	Predictor	B	Std Error	Beta	t
1.	Self-efficacy	Attributional Style	-.172	.040	-.326	-4.342***
2.	Depression	Attributional Style	.094	.026	.277	3.648***
3.	Depression	Attributional Style	.061	.026	.179	2.322*
		Self-efficacy	-.195	.049	-.305	-3.944***

* $p < .05$
*** $p < .001$

domains of the EASQ, RLE-CS, and MSES with 4 items from the demographic questionnaire: Education Importance, Relationship Importance, Most Important, and Greatest Impact. These 4 items were included to increase the likelihood of obtaining solutions differentiating women in terms of achievement and interpersonal relationships. Prior to the clustering procedure, all scores were converted to Z-scores to standardize the data across measures. For the first stage of the agglomerative clustering procedure, Ward's minimum variance algorithm was used with squared Euclidean distance as the method of similarity. Examination of the resulting dendogram suggested 2-, 3-, and 4-cluster solutions. In order to confirm the reliability of the initial Ward analysis, the data were also submitted to a Between Group Average Linkage agglomerative clustering procedure with the same method of similarity. Examination of the resulting dendogram again suggested a 4-cluster solution. The 4-cluster solution was submitted to the second stage cluster analysis, K-means iterative partitioning, to correct fusion errors and improper initial assignments. The resulting solution converged within 8 iterations, further supporting the reliability of the solution.

The resulting four cluster profiles are presented in Figure 2, with the means, standard deviations, and cluster sizes provided in Table 15. For comparison purposes, Table 15 also presents the overall scores on the EASQ, MSES, and RLE-CS as well as the values for Overall Emphasis (i.e., the composite score derived from the four items pertaining to achievement and interpersonal relations). Examination of Figure 2 and Table 15 indicates that the four profiles differ in terms of risk for depression and the relative emphasis placed on achievement and interpersonal domains. For clarity, descriptive labels highlighting these differences were assigned to each cluster.

Figure Caption

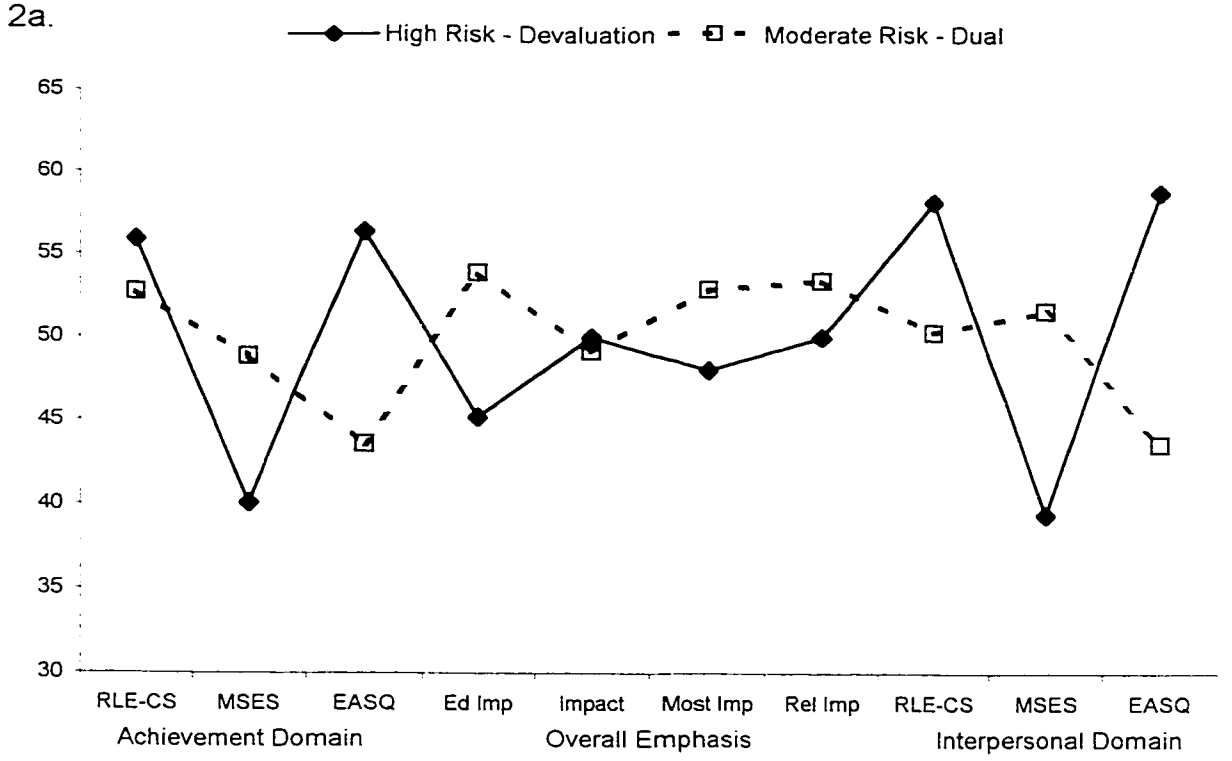
Figure 2. Mean profiles for the low, moderate, and high risk groups derived through cluster analysis.

Note. Mean values have been converted to T-scores for ease of presentation.

RLE-CS = stress, MSES = self-efficacy, EASQ = attributional style, Ed Imp = Education Importance, Most Imp = Most Important, Impact = Greatest Impact & Rel Imp = Relationship Importance.

For Most Imp and Impact, higher values represent an achievement emphasis & lower values represent a relationship emphasis.

2a.


High Risk - Devaluation
Moderate Risk - Dual
65
60
55
50
45
40
35
30
RLE-CS
MSES
EASQ
Ed Imp
Impact
Most Imp
Rel Imp
RLE-CS
MSES
EASQ
Achievement Domain
Overall Emphasis
Interpersonal Domain

2b.

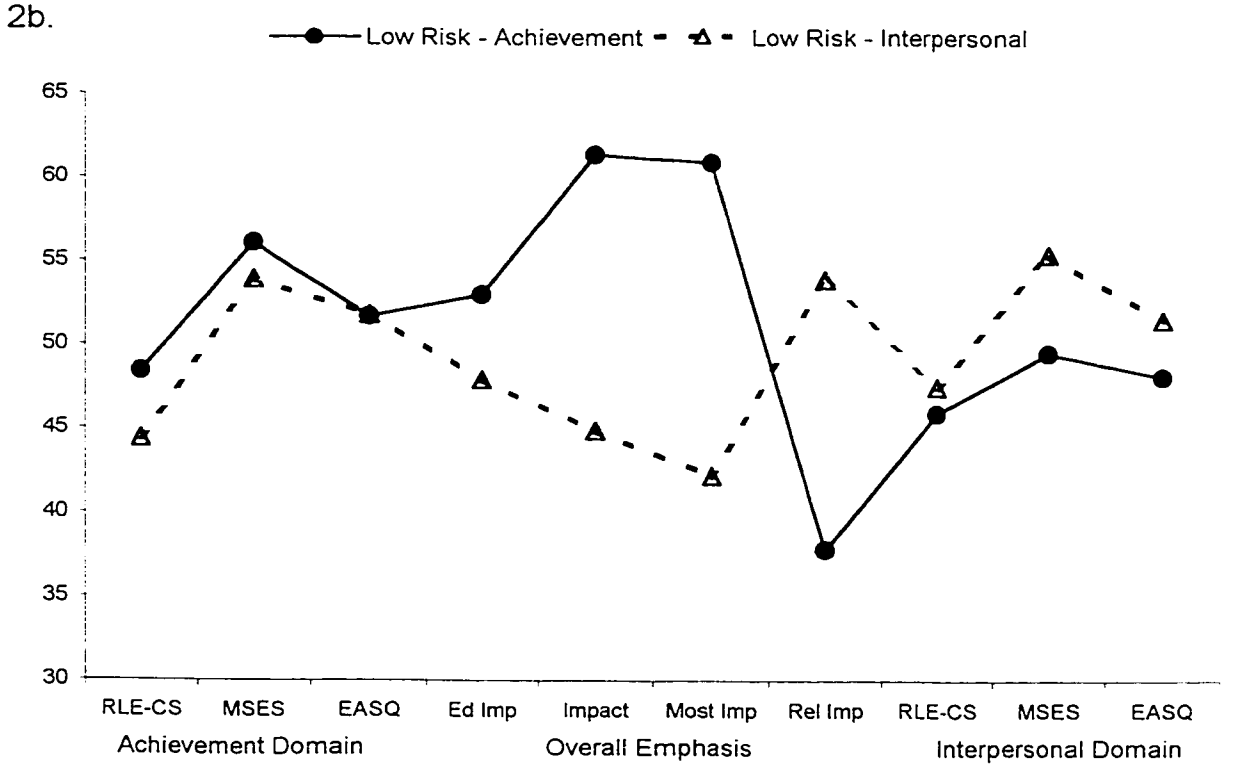

Low Risk - Achievement
Low Risk - Interpersonal
65
60
55
50
45
40
35
30
RLE-CS
MSES
EASQ
Ed Imp
Impact
Most Imp
Rel Imp
RLE-CS
MSES
EASQ
Achievement Domain
Overall Emphasis
Interpersonal Domain

Table 15.
Means, Standard Deviations of Cluster Variables as a Function of Depression Risk and Achievement/Relationship Emphasis

Variables	Clusters			
	Low Risk – Achievement[a]	High Risk – Devaluation[b]	Low Risk – Relationship[c]	Moderate Risk – Dual[d]
Stress				
Overall	8.32	15.21	8.15	11.34
	(4.42)	(5.84)	(4.10)	(4.00)
Achievement	2.32	3.61	1.62	3.06
	(1.54)	(1.77)	(1.29)	(1.71)
Interpersonal	4.39	8.30	4.91	5.79
	(3.03)	(3.45)	(2.86)	(2.40)
Self-efficacy				
Overall	145.00	120.51	150.21	141.76
	(13.50)	(12.66)	(13.10)	(13.95)
Achievement	63.87	51.42	62.11	58.13
	(6.71)	(6.75)	(5.46)	(7.27)
Interpersonal	81.13	69.09	88.09	83.63
	(10.46)	(10.06)	(10.12)	(9.50)
Attributional Style				
Overall[e]	194.74	231.38	206.47	180.46
	(28.67)	(22.88)	(31.86)	(27.19)
Achievement	51.55	55.12	51.66	44.87
	(6.48)	(7.04)	(6.26)	(6.90)
Interpersonal	68.73	83.52	73.41	62.58
	(12.82)	(10.50)	(12.46)	(10.93)
Achievement/Relationship Emphasis				
Overall Emphasis	5.00	-0.97	-3.19	0.00
	(2.53)	(3.18)	(2.30)	(1.97)
Education Importance	4.84	4.39	4.55	4.89
	(0.37)	(0.66)	(0.61)	(0.32)
Greatest Impact[f]	3.74	2.61	2.09	2.51
	(0.77)	(0.97)	(0.74)	(0.88)
Most Important[f]	4.10	2.91	2.38	3.36
	(0.70)	(0.84)	(0.71)	(0.57)
Relationship Importance	3.52	4.39	4.68	4.64
	(0.72)	(0.70)	(0.47)	(0.53)

[a] $n = 31$, [b] $n = 33$, [c] $n = 53$, [d] $n = 47$
[e] Due to missing data, the Overall scores on the Attributional Style questionnaire are based on smaller cluster sizes ($n = 30, 32, 53, \& 45$, respectively).
[f] For these items, 1 = Relationship Emphasis & 5 = Achievement Emphasis

Inspection of the pattern of scores for the four clusters revealed the presence of a profile "at risk" for depression coupled with a relative devaluation of both the achievement and interpersonal domains (High Risk – Devaluation; see Figure 2a). Overall, the High Risk – Devaluation group had the highest level of stress, the most maladaptive attributional style, and the lowest level of self-efficacy. The pattern of scores was consistent across the achievement and interpersonal domains. In addition, these women did not have a clear emphasis on either education or relationships. The ratings for Education Importance and Relationship Importance were among the lowest and the Overall Emphasis score approached zero ($\underline{M}$ = -.97, $\underline{SD}$ = 3.18), indicating no clear emphasis for either domain.

In contrast, two clusters reflected relatively "low risk" profiles for depression with relatively strong emphasis on either achievement (Low Risk – Achievement; see Figure 2b) or interpersonal domains (Low Risk – Interpersonal; see Figure 2b). Examination of the scores on the overall measures indicates that these women experienced low levels of stress, had high self-efficacy and moderate attributional style. The pattern of scores was again consistent across the achievement and interpersonal domains. The Low Risk – Achievement profile reflected a strong educational/career emphasis with ratings for the Education Importance being higher than Relationship Importance and a mean Overall Emphasis score clearly indicating an achievement emphasis ($\underline{M}$ = 5.00, $\underline{SD}$ = 2.53). In contrast, the Low Risk – Interpersonal profile reflected a strong emphasis on relationships with scores on the Relationship Importance being greater than the scores on the Education Importance, and the mean Overall Emphasis score clearly indicating a relationship emphasis ($\underline{M}$ = -3.19, $\underline{SD}$ = 2.30).

The last profile represents a mixed picture in terms of vulnerability to depression and an equally strong emphasis on both achievement and interpersonal domains (Moderate Risk – Dual Emphasis; see Figure 2). Overall, the Moderate Risk – Dual Emphasis group had relatively high levels of stress, the least maladaptive attributional style, and moderate levels of self-efficacy. The pattern of results was comparable for both the achievement and interpersonal domains. These women strongly emphasized both domains, with the highest scores on Education Importance, the second highest scores on Relationship Importance, and a mean Overall Emphasis score of 0.00 (SD = 1.97).

As a further validation of the cluster solution, the characteristics of the clusters on variables that were not included in the clustering process were also considered (see Table 16). There were no significant differences between the clusters in terms of age, F (3, 160) = 2.09, $p > .10$. However, there were significant differences in terms of year in university, F (3, 157) = 6.52, $p < .001$ and depression, F (3, 160) = 9.24, $p < .001$. The women in the Low Risk - Achievement group tended to be more advanced in their schooling (M = 2.43, SD = 1.22) than either the High Risk – Devaluation or the Moderate Risk – Dual emphasis groups (M = 1.48, SD = 0.76 & M = 1.61, SD = 0.98, respectively). As expected, the High Risk – Devaluation profile experienced significantly higher levels of depression than the other three groups.

Overall, the results of this 4-cluster solution reflected a consistent pattern of stress, attributional style, and self-efficacy across achievement and interpersonal domains, contrary to Hypothesis 5. However, differences in terms of the relative emphasis on relationships and education/career emerged. Most notably, the clusters with the lowest risk of depression were also associated with a more definitive emphasis on either

Table 16.

Means, Standard Deviations, and Univariate F-values for Validation Variables as a Function of Depression Risk and Achievement/Relationship Emphasis

	Clusters				
Variables	Low Risk – Achievement	High Risk – Devaluation	Low Risk – Relationship	Moderate Risk – Dual	Univariate F
Depression	11.84_a (8.78)	23.70_b (11.18)	13.13_a (10.23)	17.57_a (11.15)	9.24*** (df = 3, 160)
Age	20.71 (1.53)	19.91 (0.95)	20.30 (1.29)	20.24 (1.52)	2.09 (df = 3, 160)
Year in university	2.43_a (1.22)	1.48_b (0.76)	2.06 (1.00)	1.61_b (0.98)	6.52*** (df = 3, 157)

Note. Means in the same row with different subscripts differ significantly at $p < .05$ in the Tukey honestly significant difference comparison.
*** $p < .001$

education/career (Low Risk – Achievement) or relationships (Low Risk – Interpersonal). In contrast, the clusters with the highest risk of depression were associated with a dual emphasis on relationships and education/career (High Risk – Devaluation & Moderate Risk – Dual Emphasis).

Achievement and Relationship Emphasis

Using the .33 and .67 percentiles as cut-off values (-2 and +1, respectively) on the Overall Emphasis score, the women were assigned to one of three groups according to their relative emphasis on achievement and interpersonal relationships: Dual emphasis (Overall Emphasis = -1 and 0; $n = 45$), Achievement emphasis (Overall Emphasis = +1 and above; $n = 60$), and Relationship emphasis (Overall Emphasis = -2 and below; $n = 66$). Means and standard deviations for each group are presented in Table 17. Separate one-way ANOVAs indicated no significant differences between the groups in terms of level of depression, F (2, 168) = 1.09, $p > .05$; stress, F (2, 168) = 0.03, $p > .05$; attributional style, F (2, 168) = 1.80, $p > .05$; self-efficacy, F (2, 168) = 0.90, $p > .05$; age, F (2, 168) = 1.15, $p > .05$; and year in university, F (2, 168) = 0.71, $p > .05$. Simple correlations (presented in Table 18) and hierarchical regression analyses were then calculated separately for each group to determine whether the predictors of depression differed across the groups. To facilitate comparisons across groups, consistency in analyses was maintained by including the same variables for the three groups and using the same order of entry for the hierarchical analyses.

Dual Emphasis. Examination of Table 18 indicates that, in descending order of magnitude, depression was significantly related to self-efficacy ($r = -.53$; $p < .001$), stress ($r = .48$; $p < .001$), attributional style ($r = .40$, $p < .01$), and age ($r = -.30$; $p < .05$) for women

Table 17.

Means and Standard Deviations of Depression and Predictor Variables as a Function of the Emphasis on Achievement and Interpersonal Relationships

	Emphasis		
Variable[a]	Dual	Achievement	Relationship
Depression	17.62 (10.98)	14.68 (10.40)	16.95 (11.55)
Age	20.20 (1.18)	20.47 (1.59)	20.11 (1.27)
Year in University	1.91 (1.02)	1.98 (1.12)	1.77 (0.96)
Attributional Style	203.69 (33.64)	195.76 (33.22)	207.09 (32.23)
Self-Efficacy	140.80 (17.78)	141.45 (16.98)	144.89 (18.32)
Stress	10.31 (5.27)	10.55 (5.51)	10.48 (5.09)

[a]Using an alpha level of .05, there were no significant group differences.

Table 18.

Intercorrelations of Depression and Predictor Variables for Women with Dual Emphasis, Achievement Emphasis, and Relationship Emphasis

Variable	1	2	3	4	5	6
			Dual Emphasis (n = 43)			
1. Depression	--	.48***	.32**	-.54***	-.30*	-.27
2. Stress		--	.30	-.46***	-.19	-.37*
3. Attributional Style			--	-.48***	-.06	.01
4. Self-efficacy				--	.14	.13
5. Age					--	.82***
6. Year in University						--
			Achievement Emphasis (n = 56)			
1. Depression	--	.21	.34*	-.40**	-.14	-.12
2. Stress		--	.38**	-.29*	-.33*	-.35**
3. Attributional Style			--	-.32*	.00	.08
4. Self-efficacy				--	.24	.28
5. Age					--	.74***
6. Year in University						--
			Relationship Emphasis (n = 59)			
1. Depression	--	.52***	.10	-.21	-.04	-.14
2. Stress		--	.08	-.14	-.13	-.32*
3. Attributional Style			--	-.23	-.23	-.08
4. Self-efficacy				--	-.04	-.09
5. Age					--	.73***
6. Year in University						--

* $p < .05$
** $p < .01$
*** $p < .001$

emphasizing both domains. For the hierarchical regression analysis, age was entered on Step 1 to control for its effect. Stress was entered on Step 2, attributional style on Step 3, and self-efficacy on Step 4. The results of the hierarchical analysis, presented in Table 19, indicated that age accounted for 8.9% of the variance in depression, F_{change} (1, 42) = 4.08, $p < .05$. Stress significantly contributed to the prediction of depression beyond age (18.7% variance), F_{change} (1, 41) = 10.57, $p < .01$. Attributional style accounted for an additional 6.8% of the variance, F_{change} (1, 40) = 4.17, $p < .05$ and self-efficacy further contributed 6.8% beyond attributional style, F_{change} (1, 39) = 4.51, $p < .05$. To determine the contribution of attributional style once self-efficacy was considered, an additional hierarchical regression analysis was performed inverting the order of entry for attributional style and self-efficacy (see Table 19). Self-efficacy accounted for 11.9% of the variance beyond age and stress, F_{change} (1, 40) = 7.82, $p < .01$, and attributional style only contributed an additional 1.8%, F_{change} (1, 39) = 1.19, $p > .05$. The pattern of results obtained for this dual emphasis group was similar to the pattern obtained for the entire sample.

Achievement Emphasis. For women emphasizing achievement, depression was significantly related to self-efficacy ($r = -.42$; $p < .001$) and attributional style ($r = .36$, $p < .01$), but not to stress ($r = .19$, $p > .15$), or the demographic variables (both $p > .05$; see Table 18). In the hierarchical regression analyses (see Table 20), neither age, F_{change} (1, 55) = .74, $p > .05$, nor stress, F_{change} (1, 54) = 1.48, $p < .05$, significantly contributed to the prediction of depression. Attributional style added 10.1% beyond these factors, F_{change} (1, 53) = 6.26, $p < .05$, and self-efficacy contributed an additional 8.9% beyond attributional style, F_{change} (1, 52) = 6.00, $p < .05$. When self-efficacy was entered on the third step, its

Table 19.

Summary of Hierarchical Regression Analyses[a] of Variables Predicting Depression for Women with a Dual Emphasis (n = 44)

Step	Predictor	B[b]	Beta[b]	R^2change	Fchange
1	Age	-1.890	-.198	.089	4.08*
2	Stress	.524	.252	.187	10.57**
3a	Attributional Style	.051	.153	.068	4.17*
3b	Self-efficacy	-.199	-.321	.119	7.82**
4a	Self-efficacy	-.199	-.321	.068	4.51*
4b	Attributional Style	.051	.153	.018	1.19

R^2 = .412
Adj R^2 = .352
R = .642***

[a] Analysis 1 included steps: 1, 2, 3a, 4a, 5 & 6; analysis 2: steps 1, 2, 3b, 4b, 5 & 6.
[b] B and Beta coefficients are those computed at the final step.
* $p < .05$
** $p < .01$
*** $p < .001$

Table 20.

Summary of Hierarchical Regression Analyses[a] of Variables Predicting Depression for Women with an Achievement Emphasis (n = 56)

Step	Predictor	B[b]	Beta[b]	R^2change	Fchange
1	Age	-.358	-.055	.013	0.74
2	Stress	-.015	-.001	.026	1.48
3a	Attributional Style	.078	.245	.101	6.26*
3b	Self-efficacy	-.206	-.326	.144	9.36**
4a	Self-efficacy	-.206	-.326	.089	6.00*
4b	Attributional Style	.078	.245	.046	3.12

R^2 = .230
Adj R^2 = .171
R = .479**

[a] Analysis 1 included steps: 1, 2, 3a, 4a, 5 & 6; analysis 2: steps 1, 2, 3b, 4b, 5 & 6.
[b] B and Beta coefficients are those computed at the final step.
* $p < .05$
** $p < .01$

contribution increased to 14.4% and the contribution by attributional style (entered on Step 4) decreased to 4.6% of the variance in depression [F_{change} (1, 52) = 3.12, $p > .05$]. Relationship Emphasis. For women emphasizing relationships, stress was the only factor which was significantly related to depression ($r = .53$; $p < .001$; see Table 18). The results of the hierarchical regression analyses, presented in Table 21, indicated that stress contributed 27.8% of the variance in depression beyond the contribution of age, F_{change} (1, 57) = 21.96, $p < .001$. When either attributional style or self-efficacy were added on Step 3, neither variable made a significant contribution to the prediction of depression, F_{change} (1, 56) = 0.38, $p > .05$ and F_{change} (1, 56) = 1.53, $p > .05$, respectively.

In summary, the predictors of depression varied according to the relative importance placed on achievement and interpersonal domains. For women emphasizing both domains, the pattern of results were similar to that obtained in the entire sample. Specifically, stress was significantly related to depression, both attributional style and self-efficacy made significant contributions beyond stress, and self-efficacy added further variance beyond attributional style but attributional style did not add beyond self-efficacy. For women emphasizing achievement, only the cognitive variables (i.e., self-efficacy and attributional style) were significantly related to depression, with self-efficacy contributing more unique variance to depression than attributional style. For women emphasizing interpersonal relationships, stress was the only factor related to depression.

Table 21.

Summary of Hierarchical Regression Analyses[a] for Variables Predicting Depression for Women with a Relationship Emphasis (n = 59)

Step	Predictor	B[b]	Beta[b]	R^2change	Fchange
1	Age	.293	.030	.002	0.11
2	Stress	1.206	.510	.278	21.96***
3a	Attributional Style	.014	.039	.005	0.38
3b	Self-efficacy	-.086	-.131	.019	1.53
4a	Self-efficacy	-.086	-.131	.016	1.24
4b	Attributional Style	.014	.039	.001	0.11

R^2 = .300
Adj R^2 = .249
R = .548***

[a] Analysis 1 included steps 1, 2, 3a, 4a, 5 & 6; analysis 2: steps 1, 2, 3b, 4b, 5 & 6.
[b] B and Beta coefficients are those computed at the final step.
*** $p < .001$

CHAPTER IV

DISCUSSION

As anticipated, young women in university were particularly vulnerable to depression. Within the current sample, almost half the women (47.8%) were at least mildly depressed. This rate is substantially higher than the 16% to 33% typically found in community samples of men and women (see Radloff & Locke, 1986 for a review) and considerably higher than the 35% reported for a sample of female university students (Boggiano & Barrett, 1991) and the 41% reported for a combined college and university sample of men and women (Radloff, 1991). Consistent with previous research, less advanced students experienced significantly higher rates of depression than those who were further along in their studies (e.g., Oliver & Burkham, 1979) and younger women tended to be at greater risk for depression than older women (e.g., Kessler et al., 1994). Although the relationship between age and depression only approached significance in the present sample, this finding was not surprising given the restricted age range examined (i.e., 18 to 24 years) and the preponderance of women within the 19 to 22 year range.

Several factors may have accounted for the increased rate of depression obtained in the present study. Firstly, the present sample included a disproportionate number of first and second year students. Given the inverse relationship between year in university and depression (e.g., Oliver & Burkham, 1979), the high rate of depression in the current sample may have been related to the large number of first and second year students. However, as this practice is common with university samples, other factors are likely more important. Secondly, the data were collected during February and March, a time of increased academic demands (e.g., mid-term exams & papers) generally associated with

higher rates of depression (Oliver & Burkham, 1979). Thirdly, the data from the comparison studies were collected during the 1970s (i.e., Radloff & Locke, 1986), 1980s (i.e., Radloff, 1991), and early 1990s (i.e., Boggiano & Barrett, 1991). Thus, the increased rate in the present sample may also reflect a continuation of the trend towards increasing rates of depression, noted since the beginning of the 20th century (e.g., see Fombonne, 1994; Klerman et al., 1985). It is likely that some combination of these factors, as well as the exclusive use of female university students, is responsible for the higher rate of depression found in the present sample. Regardless of these factors, the present data strongly suggest that young women in university are highly vulnerable to depression.

The goal of the present study was to gain a better understanding of how stress, attributional style, and self-efficacy were related to depression experienced by these young women. As expected, depression was significantly related to all three factors. As predicted and consistent with previous research (e.g., Brown & Harris, 1978; Jack, 1987; Kendler et al., 1993; Lloyd, 1980), stress, defined in terms of the number of negative life events, was positively related to depression. That is, higher levels of stress were associated with higher levels of depression. In fact, stress was the most significant predictor of depression, accounting for 16% of the variance in depression. Compared to earlier studies, in which stress accounted for 4 to 15% of the variance in depression (see Hammen, 1988 for a review), the strength of the relationship between stress and depression in the present study was relatively high. In the present sample, stress was also significantly related to age and year in university, such that younger, less advanced students had experienced a greater number of negative life events (e.g., the changes which accompany the transition from high school to university) over the preceding 6 months. However, the relationship between

stress and depression remained significant even after controlling for the influence of demographic factors (e.g., year in university).

The present findings also contributed to the evidence in support of the relationship between attributional style and depression (see Peterson & Seligman, 1984 for a review). In the present sample, respondents with more maladaptive attributional styles (i.e., attributing negative situations to global and stable causes) had higher levels of depression than did respondents who attributed negative situations to specific and temporary causes. This relationship remained significant even after controlling for the influence of demographic variables (e.g., year in university) and stress, suggesting that the findings were robust in the present sample.

The present study also replicated the inverse relationship found between self-efficacy and depression (e.g., Lightsey, 1997). Women with higher levels of self-efficacy were less likely to be depressed than were women with lower levels of self-efficacy. This relationship remained significant after controlling for the influence of demographic variables, stress, *and* attributional style. Indeed, self-efficacy was a stronger predictor of depression than was attributional style. For these women, perceptions of personal competence were more closely related to depression than were their beliefs about the pervasiveness and persistence of causes of negative situations.

Contrary to the theoretical relationships proposed by Abramson, Alloy, and Hartlage (1988), attributional style did not *moderate* the relationship between stress and depression. That is, the stress – depression relationship was not altered by different levels of attributional style. Similarly, inconsistent with the findings of Lightsey (1997), self-efficacy did not *moderate* the relationship between stress and depression. That is, the

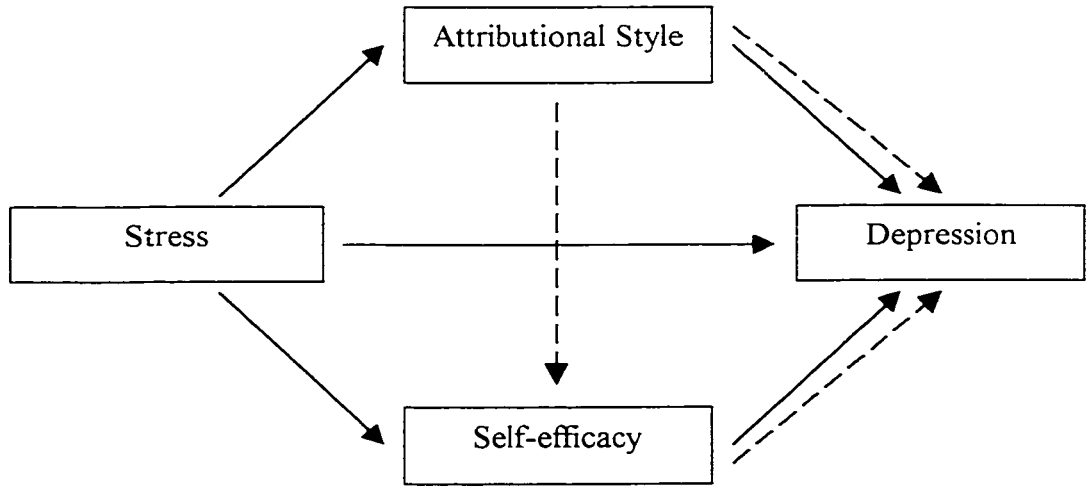
stress – depression relationship was not altered by different levels of self-efficacy. Although neither variable *moderated* the relationship between stress and depression, both attributional style and self-efficacy *partially mediated* this relationship (see Figure 3; solid lines). That is, level of stress influenced depression directly and indirectly through its influence on attributional style and self-efficacy. As such, respondents with higher levels of stress reported higher levels of depression and more negative cognitions (i.e., more maladaptive attributional style and lower self-efficacy). The more negative cognitions, in turn, were related to higher rates of depression. These findings suggest that the experience of numerous stressful life events leads to a lower sense of competence and beliefs that the causes of negative situations will be enduring and impact on many areas of life, which results in feelings of depression. Alternatively, given the correlational nature of the present results, the direction of some or all the relationships may be reversed. For instance, it may be that feelings of depression increase the recall of negative life events, elicit poorer perceptions of competence, and lead to beliefs that the causes of negative situations will be pervasive and enduring.

A similar pattern of results was obtained for the relationship between attributional style, self-efficacy, and depression. Contrary to the results of Houston (1995) and Schiaffino and Revenson (1992), self-efficacy did not *moderate* the relationship between attributional style and depression. Self-efficacy did, however, *partially mediate* this relationship (see Figure 3, dashed lines). That is, attributional style was related to depression both directly and indirectly through its influence on self-efficacy. Specifically, women reporting more maladaptive attributional styles also reported higher levels of

Figure Caption

Figure 3. Obtained relationships for stress, attributional style, and self-efficacy in predicting depression.

Note. Given the correlational nature of these results, the direction of the relationships is presumed.


Attributional Style
Stress
Depression
Self-efficacy

depression and lower levels of self-efficacy. Self-efficacy, in turn, was negatively related to depression, such that women with lower levels of self-efficacy had higher rates of depression. These findings are consistent with the hypothesized relationships for attributional style, depression, and expectancies of "future controllability" / "contingency" (e.g., Peterson & Seligman, 1984) and several studies examining these constructs (e.g., Hull & Mendolia, 1991). In fact, two of three studies examining general expectancies (i.e., Hull & Mendolia, 1991 & Tripp, Catano, & Sullivan, 1997, but not Riskind, Rholes, Brannon, & Burdick, 1987) have indicated mediational effects, consistent with the relationships posited by learned helplessness theory (e.g., Peterson & Seligman, 1984). Hull and Mendolia (1991) and Tripp, Catano, and Sullivan (1997) employed structural equation modeling to test the proposed mediating role of expectancies. In both studies, general expectancies had direct effects on depression, and attributional style had both direct and indirect (through expectancies) effects on depression, consistent with the notion that expectancies act as a *partial mediator* between attributional style and depression.

The present findings, although inconsistent with the proposed moderational effects (e.g., Abramson et al., 1988) and the findings of several studies (e.g., Lightsey, 1997; Houston, 1995; Schiaffino & Revenson, 1992), are not surprising given the significant correlations among the variables studied (i.e., stress, attributional style, self-efficacy, and depression) and the function of mediator and moderator variables (Baron & Kenny, 1986). Mediator effects are more likely to be found when there is a strong relationship between the predictor (or independent) variable and the criterion (or dependent) variable (Baron & Kenny, 1986), as was the case in the present study. In contrast, moderator effects are most likely to occur when (1) the relationship between the predictor and criterion variables is

inconsistent or "unexpectedly weak" (e.g., Riskind et al., 1987 – concurrent analysis). (2) the potential moderator is unrelated to the predictor (e.g., Houston, 1995; Lightsey, 1997; Schiaffino & Revenson, 1992), and (3) the potential moderator is unrelated to the outcome variable (e.g., Riskind et al., 1987 – prospective analysis). In the present study, none of these conditions were met. Indeed, depression was most strongly correlated with stress, and attributional style and self-efficacy were significantly related to each other as well as to stress and depression.

Numerous methodological differences may have accounted for the differences in the results obtained in the present study and those obtained elsewhere (e.g., Houston, 1995; Lightsey, 1997; Schiaffino & Revenson, 1992). Reviewing this literature indicates wide variations in the methodologies employed. Some studies have evaluated prospective predictors of depression (e.g., Lightsey, 1997), whereas other studies have examined concurrent predictors (e.g., Hull & Mendolia, 1991; Schiaffino & Revenson, 1992). The characteristics of the samples studied have also varied considerably – from middle-aged rheumatoid arthritis patients with a symptom flare-up (Schiaffino & Revenson, 1992) to male and female university students participating in a laboratory induced failure situation (e.g., Houston, 1995) and women in university reporting on the number of negative life events (present study). As gender is related to the strength of the relationships between each predictor and depression (e.g., stress; Cronkite & Moos, 1987; Spangler et al., 1996), it may be that the relationships among these predictors also vary according to gender. Consequently, samples with varying proportions of male and female participants may have resulted in different relationships among the variables.

There has also been very little consistency in the measurement of depression,

attributional style, and self-efficacy. For instance, attributional style was assessed using ratings of internality, stability, and globality for an actual event (Schiaffino & Revenson, 1992), the original ASQ with 6 positive and 6 negative scenarios (e.g., Hull & Mendolia, 1991), the EASQ with 12 negative scenarios (Houston, 1995) and the EASQ with 24 negative scenarios (present study). The reliability and validity of these measures also varied greatly. For instance, the internal consistency of some dimensions of the ASQ and EASQ has been notably poor, especially the internality dimension of the ASQ with alphas as low as .32. Despite poor reliability, results have been reported for the three dimensions separately as well as for the generality composite and the ASQ/EASQ total score. Mediational and moderational effects have also been determined with a variety of statistical procedures (e.g., structural equation modeling & Baron & Kenny's 1986 procedure). In fact, even studies employing the same methods (i.e., Baron & Kenny's 3 regression equations) have differed in their statistical procedures, further contributing to variability in the literature. Given these wide variations in methodology, conclusions drawn from comparisons across studies are tenuous at best. Consequently, this area of research would benefit greatly from a more consistent use of psychometrically sound measures as well as a more systematic replication of previous findings.

The present study was unique in its inclusion of measures of the importance and emphasis placed on achievement and interpersonal relationships. Direct comparisons of achievement and relationships in terms of having the greatest impact on feelings and being most important were not significantly related to depression. Nor were the ratings of the importance of relationships for happiness. However, ratings of the importance of achievement for happiness were negatively related to depression scores, such that higher

ratings for the importance of achievement on happiness were associated with lower levels of depression. It may be speculated that given the academic demands of university, women who do not find achievement important for their happiness may become distressed by the volume of work, the amount of sacrifice involved to complete this work, and/or the level of stress in this area. Alternatively, women who are depressed may devalue areas in which they are experiencing significant amounts of stress. Consistent with the latter explanation, women with the highest rate of depression and the highest risk of depression (i.e., high stress, low self-efficacy, & maladaptive attributional style for achievement and interpersonal domains) tended to devalue both these areas of their lives. In contrast, those women with lower depression and lower risk for depression tended to emphasize either achievement or interpersonal domains. Given the correlational nature of the present results, the direction of the relationships remains inconclusive.

Moreover, meaningful differences in the predictors of depression emerged when the relative emphasis on achievement and interpersonal relationships was considered. For women emphasizing achievement, only the cognitive variables (i.e., self-efficacy and attributional style) were significantly related to depression, with self-efficacy again being a stronger predictor of depression than attributional style. For women emphasizing interpersonal relationships, stress was the only factor related to depression. For women emphasizing both domains, both sets of predictors (i.e., attributional style, self-efficacy, and stress) were significantly related to depression.

Considering an achievement emphasis as a traditionally male value and a relationship emphasis as a traditionally female value, the present results dovetail well with the results of studies examining gender differences in predictors of depression (e.g.,

Cronkite & Moos, 1984; Handal, Gist, & Wiener, 1987; Kendler et al., 1993). Stress was related to depression for women with traditionally female values (i.e., interpersonal emphasis), consistent with Kendler et al.'s (1993) finding that the most important factor in the experience of depression for women was stress. Stress was less important for depression in women with traditionally male values (i.e., achievement emphasis), consistent with the findings for the predictors of depression in men (e.g., Cronkite & Moos, 1984). For these women with traditionally male values, attributional style was an important predictor of depression, as was the case in Handal, Gist, and Wiener's (1987) study of men and women in university. The pattern of results for women with the dual emphasis appear to represent the cross-over point between the traditionally male and traditionally female values, as both sets of predictors were related to depression. It is notable that there were no significant differences between the groups in terms of age, level of depression, stress, attributional style, or self-efficacy. These findings suggest that the relative emphasis on achievement and interpersonal relationships does not influence the vulnerability to depression, but rather influences the risk factors. As such, the present results suggest that an initial step in understanding depression in women is to assess the importance of the achievement and interpersonal areas of their lives. Similarly, Blais et al.'s (1990) examination of the significance of a variety of life domains, including education and interpersonal relationships, suggested that knowledge of the relative importance of life domains would be instrumental in understanding self-concepts.

In summary, the present results suggest that young women in university are particularly vulnerable to depression and that, as a group, depression is related to stress, attributions for negative situations, and perceptions of competence in achievement and

interpersonal domains. However, women in university are not a homogeneous group with regard to the emphasis placed on these domains. Consequently, when dealing with this population, the relative emphasis on achievement and interpersonal relationships may be an important factor in understanding their vulnerability to depression.

Given the exploratory nature of these analyses, such findings, although promising, must be interpreted with caution. Replication of these results is required before generalizing to different samples. Follow-up studies may focus on both men and women to determine whether gender and the relative emphasis placed on relationships and achievement are both related to the predictors of depression. In addition, future studies could focus on first year students exclusively (or more advanced students exclusively) in order to control for the normative stress periods. Finally, it would be interesting to determine whether these relationships hold for women not attending university.

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Appendix A: Demographic Questionnaire

Age: _____

To which ethnic or cultural group do you belong: _____

Have you chosen a major? Yes ___ No ___

If yes, please specify: _____

Where are you originally from (where did you grow up)?

Windsor: _____ Essex/Kent Counties: _____ Other : _____

What is your current living arrangement?

Alone: _____ In residence: _____ With a partner: _____

With parents: _____ With friends: _____ With your children: _____

Relationship:

Single (not dating): _____ Dating: _____ Steady relationship: _____

Living together: _____ Married: _____ Married with children: _____

Single Mother: _____

Please indicate how important each of the following areas are for your happiness:

Relationships:

1	2	3	4	5
Not Important				Extremely Important

Education/Career:

1	2	3	4	5
Not Important				Extremely Important

Which area of your life is most important to you?

1	2	3	4	5
Relationships				Education/Career

Which area of your life has the strongest impact on how you feel?

1	2	3	4	5
Relationships				Education/Career

Appendix B: Recent Life Events - College Scale

Note:

[a] Indicates items designated as Achievement

[b] Indicates items designated as Interpersonal

Recent Events

Instructions: The following list contains events which may or may not have occurred in your life in the last SIX MONTHS. For each item, please do the following.

1. Think about whether the event occurred to you. If it did not occur in the past **6** months, please MARK "E" as your answer.

2. If the event did occur during the last **6** months, think about whether it had a negative or positive effect on you. Rate the effect as follows:

A = very positive B = slightly positive C = slightly negative D = very negative

Again, answer "E" if the event did not happen.

____ 1.[b] Terminated intimate relationship (boyfriend/girlfriend)
____ 2.[b] Marriage
____ 3.[b] Became a parent
____ 4.[b] Became engaged
____ 5.[b] Marital separation or divorce

____ 6.[b] Increased separation from children
____ 7.[b] Beginning or increased sexual activity
____ 8.[b] Had a disagreement with friend (small or large disagreement)
____ 9.[b] Personal rejection by a close friend or lover
____ 10.[b] Started a love relationship

____ 11.[b] Increased amont of dating
____ 12.[b] Separation from parents or siblings
____ 13.[b] Chose to terminate relationship with close friend
____ 14.[b] Decreased number of friends
____ 15.[b] Learning that a close friend/relative is very different than you thought (e.g., sexual behavior, involvement in serious drugs, criminal activities, etc.)

____ 16.[b] Relationship with relative (parents, siblings, etc.) became worse
____ 17.[b] Relationship with relative (parents, siblings, etc.) became better
____ 18.[b] Began living with lover exluding marriage
____ 19.[b] Decreased amount of dating
____ 20.[b] Relationship with spouse improved

____ 21.[b] Decreased sexual activity
____ 22.[b] Difficulty with sexual performance
____ 23.[b] Developed relationships with people who have new and interesting ideas or life style
____ 24.[b] Became an aunt or uncle
____ 25.[b] Marriage of a close friend or relative

A = very positive B = slightly positive C = slightly negative D = very negative E = did not occur

_____ 26.[b] Death of a friend
_____ 27.[b] Friend or relative encountered serious trouble or failure experience
_____ 28.[b] Worsening of parents' financial status
_____ 29.[b] Health of a close relative/friend became much worse
_____ 30.[b] Death of a close relative (parent, sibling, or child)

_____ 31.[b] Parents separated or divorced
_____ 32.[b] Remarriage of parent
_____ 33.[b] Serious conflict between members of your family
_____ 34.[a] Significantly increased your level of debt
_____ 35.[a] Fired or lost job

_____ 36.[a] Quit job
_____ 37.[a] Received positive recognition at job (promotion, significant raise)
_____ 38.[a] Significantly increased economic difficulties
_____ 39.[a] Acquired a car
_____ 40.[a] Significantly improved your financial situation

_____ 41.[a] Began a new job
_____ 42.[a] Increased difficulty with a job
_____ 43.[a] Discharged from the military
_____ 44.[a] Significantly improved your course grades
_____ 45.[a] Transferred to a new school

_____ 46.[a] Began college for first time
_____ 47.[a] Withdrawal from a college or university
_____ 48.[a] Returned to school after prolonged absence
_____ 49.[a] Graduation from high school or junior college
_____ 50.[a] Applied to graduate or professional school

_____ 51.[a] Decided on a major or career
_____ 52.[a] Increased demands from academic coursework
_____ 53.[a] Increased problem with academic performance (coursework, grades, GREs, etc)
_____ 54.[b] Moved out of parents' home
_____ 55.[b] Moved back into parents' home after living away

_____ 56.[b] Change of residence (other than 54 or 55)
_____ 57.[b] Serious conflict with roommate
_____ 58. Improved living conditions (e.g., housing, roommate)
_____ 59.[b] Difficulty with landlord/landlady
_____ 60.[b] Moved to a new city

A = very positive B = slightly positive C = slightly negative D = very negative E = did not occur

____ 61. Physical appearance became worse or much worse
____ 62. Physical health became worse or much worse (due to illness or accident)
____ 63. Improved your physical health
____ 64.[a] Hospitalization of self
____ 65. Improved your personal health/habits

____ 66. Worsening of your personal health/habits
____ 67. Involvement in accident
____ 68.[b] Began counseling or psychotherapy
____ 69. Began volunteer work
____ 70.[a] Received recognition or award for achievement

____ 71. Victim of crime
____ 72. Problem with the law (arrested, detained, etc.)
____ 73.[b] Acquired a pet
____ 74.[a] Selected for a leadership position in an organization
____ 75.[b] Loss of a pet through death or runaway

____ 76.[b] Increase in amount of leisure time
____ 77.[a] Decreased involvement with hobby or task
____ 78.[b] Joined a social organization
____ 79.[b] Increased exposure to cultural or entertainment experiences
____ 80.[a] Accomplished major goal in hobby or recreational activity

____ 81.[b] Major increase or change in religious commitment
____ 82.[b] Not accepted into a social organization you desired
____ 83.[a] Organization you belong to (club, team, etc.) accomplished an important goal
____ 84.[a] Rejected by school you wished to attend
____ 85.[a] Serious conflict with a professor or boss

____ 86.[b] Relationship with boy/girlfriend or spouse became worse or much worse
____ 87.[b] Significantly improved your relationship with boy/girlfriend or spouse
____ 88.[a] Major change in number of hours of work or school
____ 89. Change in physical appearance
____ 90. Began or increased use of illicit drugs or alcohol

____ 91. Decreased use of illicit drugs or alcohol
____ 92. Possibility of unwanted pregnancy (self or partner)
____ 93. Abortion (self or partner)

Appendix C: Expanded Attributional Style Questionnaire

Note:

[a] Indicates items designated as Achievement

[b] Indicates items designated as Interpersonal

Interpretation of Events

Please try to imagine yourself in the situations that follow. If such a situation happened to you, what would you feel would have caused it? While events may have many causes, we want you to pick only one – THE MAJOR CAUSE IF THIS EVENT HAPPENED TO YOU.

Please write the cause in the blank provided after each event. Next we want you to answer three questions about the cause you provided. First, is the cause of this event something about you or something about other people or circumstances? Second, is the cause of this event something that will persist across time or something that will never again be present? Third, is the cause of this event something that affects all situations in your life or something that just affects this type of event?

To summarize, we want you to:

1. Read each situation and vividly imagine it happening to you.
2. Decide what you feel would be the one major cause of the situation if it happened to you.
3. Write the cause in the blank provided.
4. Answer three questions about the cause.

1.[a] You have been looking for a job unsuccessfully for some time.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

2.[b] A friend comes to you with a problem, and you don't try to help.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

3.[a] You give an important talk in front of a group, and the audience reacts negatively.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

4.[a] You meet a friend who acts hostilely to you.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

5.[a] You can't get all the work done that others expect of you.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

6.[b] You go out on a date, and it goes badly.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

7.[b] Your steady romantic relationship ends.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

---

8. You experience a major personal injury.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

9. You are found guilty of a minor violation of the law.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

10.[b] You and your family have a serious argument.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

11.[a] You are fired from your job.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

12.[a] After your first term at school, you are on academic probation.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

13.[b] Your best friend tells you that you are not to be trusted.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

14.[b] You have a lot of trouble understanding what your new employer requires of you.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

15. You cannot sleep soundly.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

16.[b] You experience sexual difficulties.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

17. You confront a serious conflict in your values.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

18.[b] Your roommate tells you he/she is switching to a room down the hall.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

19. There are few recreational activities in which you are interested.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

---

20. Your Christmas vacation plans are cancelled.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

21. You have trouble with one of your instructors.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

---

22. You experience financial difficulties.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

23.[b] Your attempt to capture the interest of a specific person of the opposite sex is a failure.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

---

24. You feel sick and tired all of the time.

A. Write down the one major cause:

B. Is the cause of this due to something about you or something about other people or circumstances? (circle one number)

Totally due to others	1	2	3	4	5	6	7	Totally due to me

C. In the future, will this cause again be present? (circle one number)

Never present	1	2	3	4	5	6	7	Always present

D. Is this cause something that affects just this type of situation, or does it also influence other areas of your life? (circle one number)

Just this situation	1	2	3	4	5	6	7	All situations

Appendix D: Modified Self-Efficacy Scale

Note:

[a] Achievement items

[b] Interpersonal items

This questionnaire is a series of statements about your personal attitudes and traits. Each statement represents a commonly held belief. Read each statement and decide to what extent it describes you. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others. Please indicate your own personal feelings about each statement below by marking the letter that best describes your attitude or feeling. Please be very truthful and describe yourself as you really are, not as you would like to be

Mark:

A If you DISAGREE STRONGLY with the statement.
B If you DISAGREE MODERATELY with the statement.
C If you neither agree nor disagree with the statement.
D If you AGREE MODERATELY with the statement.
E If you AGREE STRONGLY with the statement.

___1.[a] When I make plans, I am certain I can make them work.
___2.[a] When I set important goals for myself, I rarely achieve them.
___3.[b] I can easily get my point across in conversations.
___4.[b] When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.
___5.[a] I give up on things before completing them.

___6.[b] I do not handle myself well in social gatherings.
___7.[a] If something looks too complicated, I will not even bother to try it.
___8.[a] When I have something unpleasant to do, I stick to it until I finish it.
___9.[b] I have trouble getting people to understand what I mean.
___10.[a] When unexpected problems occur, I don't handle them well.

___11.[b] I avoid facing relationship problems.
___12.[b] If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.
___13.[b] When I really need something, I am able to tell my friends.
___14.[b] I have trouble letting others know my feelings.
___15.[b] If I have difficulty in a relationship, I keep working at it.

___16.[a] I avoid trying to learn new things when they look too difficult for me.
___17.[b] I find it difficult to be open with my friends.
___18.[a] When trying to learn something new, I soon give up if I am not initially successful.
___19.[a] I feel insecure about my ability to do things.
___20.[b] I do not handle relationship problems very well.

___21.[a] Failure just makes me try harder.
___22.[b] I am able to ask for what I need from people.
___23.[a] I am a self-reliant person.
___24.[b] When I enter into a new relationship, I am unsure whether I can make it work.
___25.[a] I give up easily.

Mark:

A If you DISAGREE STRONGLY with the statement.
B If you DISAGREE MODERATELY with the statement.
C If you neither agree nor disagree with the statement.
D If you AGREE MODERATELY with the statement.
E If you AGREE STRONGLY with the statement.

___26.[a] I do not seem capable of dealing with most problems that come up in my life.
___27.[b] It is difficult for me to make new friends.
___28.[b] It is easy for me to talk about myself.
___29.[b] If I meet someone interesting who is hard to make friends with, I'll soon stop trying to make friends with that person.
___30.[b] I have acquired my friends through my personal abilities at making friends.

___31.[a] One of my problems is that I cannot get down to work when I should.
___32.[a] If I can't do a job the first time, I keep trying until I can.
___33.[b] I have trouble dealing with conflicts in my relationships.
___34.[b] When problems arise in relationships, I worry that the relationship is over.
___35.[b] I avoid facing difficulties.

___36.[b] If I have an argument with a friend, I know how to deal with it.
___37.[a] When I decide to do something, I go right to work on it.
___38.[b] I have trouble asserting myself.
___39.[b] I believe I am socially competent.

Appendix E: Center for Epidemiologic Studies - Depression Index

Using the scale below, indicate the number which best describes how often you felt or behaved this way DURING THE PAST WEEK.

1 = Rarely or none of the time (less than 1 day)
2 = Some or a little of the time (1-2 days)
3 = Occasionally or a moderate amount of time (3-4 days)
4 = Most or all of the time (5-7 days)

DURING THE PAST WEEK:

___1. I was bothered by things that usually don't bother me.
___2. I did not feel like eating; my appetite poor.
___3. I felt that I could not shake off the blues even with help from my family or friends.
___4. I felt that I was just as good as other people.
___5. I had trouble keeping my mind on what I was doing.

___6. I felt depressed.
___7. I felt that everything I did was an effort.
___8. I felt hopeful about the future.
___9. I thought my life had been a failure.
___10. I felt fearful.

___11. My sleep was restless.
___12. I was happy.
___13. I talked less than usual.
___14. I felt lonely.
___15. People were unfriendly.

___16. I enjoyed life.
___17. I had crying spells.
___18. I felt sad.
___19. I felt that people disliked me.
___20. I could not get "going."

Appendix F: Consent Form to Participate in Research

Researcher: Chris Laurent, B.A.
Supervisor: R. R. Orr, Ph.D.
Department of Psychology
University of Windsor

Purpose: The goal of this study is to examine the thoughts and feelings of women in university.
This study is being conducted in partial fulfillment of the M.A. requirements for Chris Laurent.

Procedures: You will be asked to provide some basic demographic information (e.g., your age) and to complete four questionnaires. The questionnaires will ask about recent events in your life, some of your beliefs and attitudes, and how you are feeling. The completion of the questionnaires will take approximately 30 to 45 minutes to complete, for which you will receive 1 bonus point towards your final grade.

I understand that my participation in this study is entirely voluntary and that I may withdraw at any time or decline to answer questions (for any reason), without explanation or penalty.

I understand that all my responses will remain confidential and that neither my name nor my student number will be included with any of my responses. I also understand that the results of this study may be published using group data.

I understand that I may ask questions at any point in this investigation and that I may contact the researcher (Chris Laurent, 253-4232, ext. 2215), her supervisor (Dr. R.R. Orr, 253-4232, ext. 2222), or the Chair of the Ethics Committee (Dr. D. Shore, 253-4232, ext. 2253) should any questions arise.

I understand that a summary of the results will be made available in the psychology department at the completion of the study.

To indicate that you have read and understood the above instructions, that you have received a copy of this agreement, and that you voluntarily consent to participate in this study, please sign your name and date on the lines below.

_____ _____

Participant's name Date

VITA AUCTORIS

Christine Marguerite Laurent was born on March 8, 1970 on the South Shore of Montreal, Quebec. She graduated from Champlain College in 1989. In 1994, Christine graduated from Concordia University with an Honours degree in Psychology. Before continuing her education, she worked with Alzheimer's, Parkinson, and stroke patients as part of the research laboratories of Dr. Gloria Waters and Dr. Howard M. Chertkow. Since 1996, Christine has been enrolled in the doctoral program in child clinical psychology at the University of Windsor.